The Oil and Gas Journal

PRODUCING REFINING MARKETING

VOL. 25. NO. 50. TULSA, OKLAHOMA, MAY 5, 1927

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TABLE OF CONTENTS

SPECIAL ARTICLES

Big Wells in Seminole and Panhandle 27
By James McIntyre
On top of a production increase, this week's crop of new wells include some notable gushers.

West Texas Field Not a Menace 29
By C. D. Lockwood
Conservative operating methods will hold down production in potentially rich field.

Preparing to Curb Overproduction 30
By L. M. Fanning
Belief that industry can formulate its own plan for consideration by Oil Board.

Ready to Join in Co-operative Movement 30
By H. F. Wilcox

Some Action Absolutely Necessary 31
By Richard Airey
Suggests change in manufacture of gasoline may solve overproduction.

Principles Underlying Soda Process 32
By P. G. Nutting
Second article in series describing chemical and physical factors in oil recovery.

Conservation of Water and Heat Exchange 32
By H. H. Greene

Varied Program at N.P.A. Meeting 33
By George Turnbull
Discuss manufacturing, standardization and statistics at Cambridge Springs.

Defining Flash and Explaining Test 33
By V. T. Downey

Gas Men Meet at Cincinnati Next Week 34
By Andrew Rowley
Program replete with discussions of interest to every company.

Starting Something (Editorial) 36

Improving Use of Air Lift 80
By Frank Peterson
Petroleum engineer preesnts interesting suggestions for consideration of research men.

Need for Refinery Statistics 84
By E. U. Lyons

Petroleum Engineer Has Plan for Co-operation 127
By Earl Oliver

Oil Industry Operating Below Cost 135
By O. P. Keeney

Mexican Situation More Optimistic 136

Products Causing Disputes 156
By Frank Berry

Tests at Eastern Refineries Show Variation 162
By A. W. Scott

Bureau of Mines Statement for March 166

Progress of Fire Protection 168
By H. E. Newell

Capillary and Volumetric Controls 180
By Stanley C. Herold

FIELD OPERATIONS

North and West Texas 38-39-123
By C. D. Lockwood

Late Fields 39

Texas Panhandle 40-123
By James H. Dameron

Oklahoma 42
By J. L. Dwyer

Farmington, New Mexico 42

East Central Texas 44

Kansas 44
By J. L. Dwyer

North Louisiana-Arkansas 46
By Neil Williams

Gulf Coast 49
By P. L. McGreal

Southwest Texas 51
By B. D. Stevenson

Rocky Mountain Area 53
By Frank B. Taylor

Canada 53
By Victor Lauriston

California 55
By L. P. Stockman

Artesia, New Mexico 56

Pennsylvania-West Virginia 60
By D. S. Wakenight

Michigan 60

Central West 62
By Whit

Kentucky-Tennessee 62

REFINING AND MARKETING

Greater Buying in Oklahoma Market 28
By C. O. Willson
Gas oils and kerosenes advance due to better demand with some refiners advancing gasolines. Fuel oils weak.

Chicago Market Shows Little Change 152
By J. B. Waldo

Eastern Trend Still Downward 153
By N. O. Fanning

Accounting in Refinery Operation 154
By Paul C. Girard
Various types of processing in modern plant with changing prices.

Refining and Marketing News 156

Refinery and Crude Prices 158-159

Tank Wagon Quotations 160

Plant Operators' Page 162

Technical Questions Answered 170
By Dr. C. K. Francis

Laboratory Equipment for Refining 172
By Gustav Egloff and Jacque C. Morrell
With complete apparatus and proper operating procedure possible to make tests for all products.

ARTICLES OF GENERAL INTEREST

The Advertiser's Index 25

Equipment and Supplies 64

Natural Gas Developments 66

Men Known in Oildom and Personals 68

Gulf Port Shipments in March 120

Classified Want Advertisements 150-151

Acute Selling of Oil Securities Halts 157
By N. O. Fanning

Denver Gas Pipe Line Order 192
By B. E. V. Luty

Crude Petroleum Statistics 194

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Refinery Section Starts on Page 152

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Big Wells in Seminole and Panhandle

Highest daily average estimated production in 1926, week ended Dec. 25, 2,385,139 bbls. Lowest in 1926, January 30, 1,915,960 bbls.

On Top of a Production Increase, This Week's Crop of New Wells Include Some Notable Gushers

By James McIntyre

Highest daily average estimated light oil production in 1926, week ended Dec. 25, 1,797,349 bbls. Lowest in 1926, Jan. 30, 1,371,600 bbls.

Petroleum economists and the ordinary run of oil men alike, have quit trying to guess what the production peak will be in the United States this year. In the week ending April 30, the production averaged 2,465,897 barrels per day according to estimates, but the new week started with reports of new wells so numerous and so large as to make it quite probable that the current week's production will average higher than that of last week. At the same time in the near future there are wells due in the Bowlegs Pool in Oklahoma which will surely bring about a further increase in the total crude output. We are producing 477,619 barrels per day in excess of our last year's record at this time, and about 250,000 barrels per day more than the industrial requirements call for. Bureau of Mines figures for March, just made available, show that about 5,000,000 barrels of crude and nearly 2,700,000 barrels of gasoline were added to stocks in March.

The Seminole Field in Oklahoma broke all records for production for a month in a high-grade oil field by producing an average of 333,666 barrels per day in the month of April, according to the weekly estimates. The final figures on production will not change this materially. The peak production in the Cushing Field came in the same month in 1915. It was 287,000 barrels per day. Seminole has by no means reached its peak. Last week the increase in that field and in the Wewoka Pool in the same county, brought the total of Oklahoma's production to a new high level for a week, 732,575 barrels per day. In the same week last year Oklahoma averaged 463,215 barrels per day, indicating an increase of 269,360 barrels per day, or 58 per cent.

About 7 miles southeast of Borger, Hutchinson County, Texas, and as many miles from the big developments in that county, a well was brought in the past week which on Monday was producing 450 barrels an hour, against back pressure.

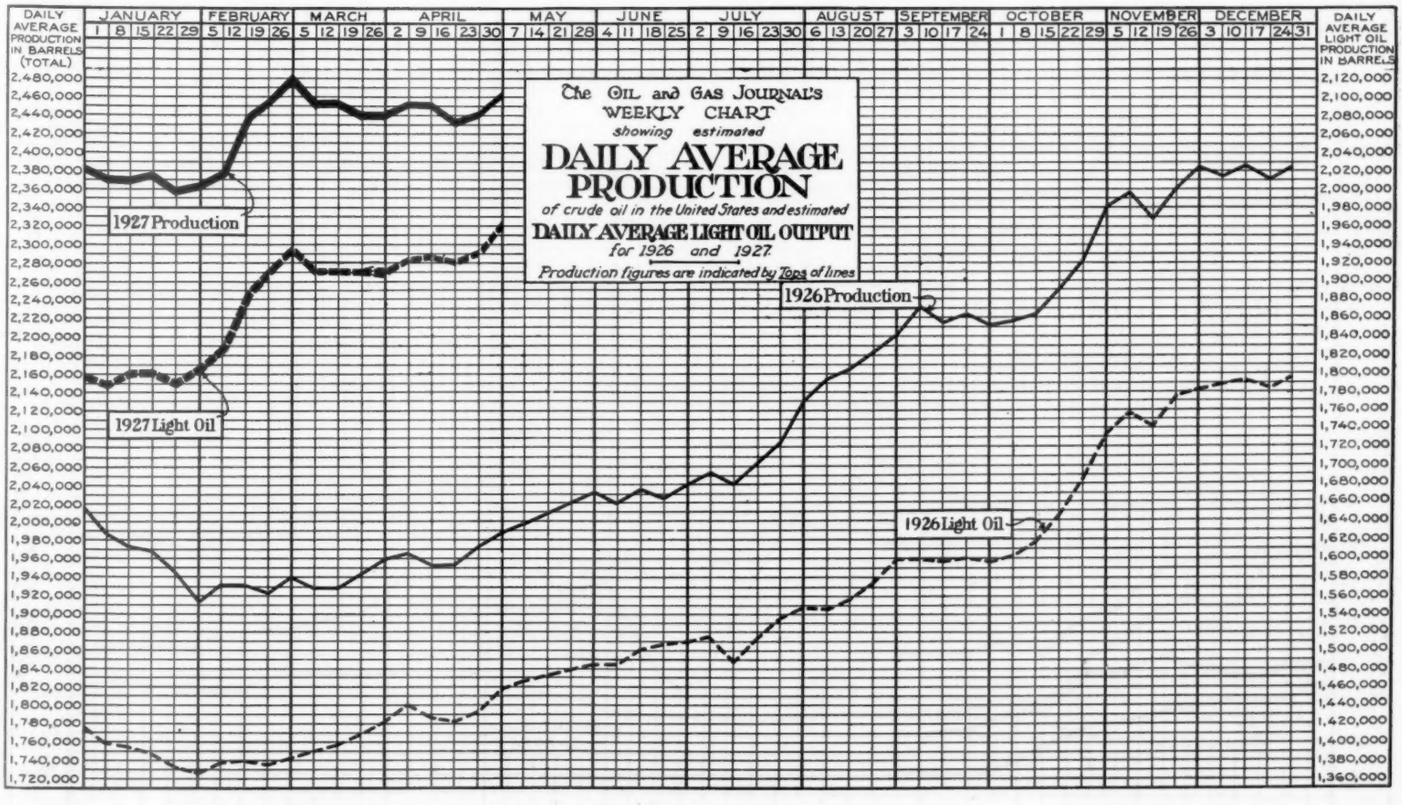
West Texas oil operators, with an eye on the present excessive production and the possibility of still lower crude prices in the event of serious production increases, have made plans for a conservative development of that wonderful territory.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended April 30, and a comparison with the previous week follows:

	April 30		April 23	
Oklahoma—	Light	Heavy	Light	Heavy
Tonkawa	22,700	.....	23,160	.....
Burbank	42,245	.....	42,440	.....
Other Osage Fields	35,010	.....	35 020	.....
Cushing and Shamrock	21,210	.....	21,160	.....
Bristow and Eastern Bristow	27,340	.....	27 240	.....
Cromwell	12,720	.....	13,200	.....
Garber	16.040	.....	16,600	.....
Blackwell-Braman	13,720	.....	13.780	.....
Seminole	341,810	.....	333,230	.....
Wewoka	21,350	.....	17,820	.....
Northern Miscellaneous	111,130	.....	111,310	.....
Southern Fields	67,300	.....	66,600	.....
Total Oklahoma	732 575	.....	721,560	.....
North Louisiana	38,565	8,540	38,085	10,780
Arkansas	24.395	79,620	24,260	84,225
North Central and West Texas	267,305	.....	270.810	.....
Texas Panhandle	123.175	.....	119 925	.....
East Central Texas	36,986	.....	34,575	.....
Kansas	114.750	.....	115.440	.....
Total Mid-Continent Area	1,337,751	88,160	1,324,655	95,005
Gulf Coast	.....	150,511	.....	146.979
Southwest Texas	.....	37,545	.....	37,930
Eastern	109,500	.....	106,000	.....
Rocky Mountain Area	94,930	.....	87,480	.....
California—				
Santa Fe Springs	43.000	.....	43,000	.....
Long Beach	92,000	.....	93,000	.....
Torrance	6 000	17,000	6,000	18,000
Huntington Beach	73,000	.....	73,000	.....
Dominguez	17.500	.....	17,500	.....
Rosecrans	10.500	.....	11 000	.....
Inglewood	24,000	12,500	24,000	13,000
Ventura Avenue	52,000	.....	52,000	.....
Seal Beach	45 000	.....	38,000	.....
Remainder of State	59,000	196,000	59,000	197,000
Total California	422,000	225.500	416 500	228.000
Total United States	1,964,181	501,716	1,934,635	507,914
Grand Total	2,465,897		2,442,549	

Total Increase, 23,348 Bbls.; Light Oil Increase, 29,546 Bbbls.



Greater Buying in Oklahoma Market

Gas Oils and Kerosenes Advance Due to Better Demand, With Some Refiners Advancing Gasolines. Fuel Oils Weak

By C. O. Willson

An advance of one-quarter of a cent in U. S. Motor gasoline prices by several refiners, slightly higher kerosene and gas oils quotations and a better tone in the natural gasoline market were developments of the past few days in the Oklahoma (Group 3) market. Although there was nothing to indicate that the trend in these products is permanent the trade for several weeks has become so accustomed to constantly lower prices that the slight improvement of the past week attracted considerable attention. Partially offsetting these encouraging developments from the standpoint of the seller was the continued weakness and lower prices in fuel oils and distillates.

The gasolines higher and lower in gravity than the 58-60 U. S. Motor grade were not changed in price. In fact the price spread of 6¼ to 6½ cents continues the same as last week for the U. S. Motor grade. However, a few refiners who were selling at 6¼ cents last week advanced their price to 6½ cents, resulting in a larger movement at that quotation during the past few days.

No special reason can be assigned for this advance on the part of several refiners. The fact that the anticipated crude price did not materialize encouraged some of the sellers relative to the gasoline market. A few of the refiners reported a greater movement due to better weather conditions in the customers' territory. Oklahoma refiners, directly or indirectly, have benefited somewhat from the floods in the southeastern territory. Arkansas and Louisiana refiners which normally supply the bulk of this demand have been handicapped by the fact that floods have retarded the return of tank cars and this has resulted in some business being placed with other Mid-Continent refining groups. Still another explanation offered by one manufacturer was to the effect that he advanced his gasoline price one-quarter of a cent due to the lower prices he was forced to take for other products.

The possible development on which refiners are relying for continued improvement in gasolines is better weather in the middle western states. Past experience of refiners in this territory shows that May with warm weather brings very marked increase in demand. It is not unusual for refiners during the month to start drawing on their gasoline storage accumulated during the winter and early spring months.

Gas Oil Higher

Predictions heard two weeks ago that gas oil prices were at bottom at present crude prices have been borne out by developments of the past week. Buyers, apparently sensing this situation, have been in the market for the past week and have placed some sizeable orders. The 2½-cent material due to this buying has practically disappeared. One buyer who made a thorough canvass of the field reported that the prices asked ranged from 2⅝ to 3 cents, with a majority quoting 2¾ cents.

As has been explained previously, the refiners are refusing to sell at the low prices which prevailed two weeks ago due to the fact that the gas oil is worth more as charging stock for their cracking units. Some are storing with the expectation that the product can be sold as blending stock for distillates later in the year. Buying is expected to continue as present quotations should still be attractive to a majority of the industrial gas oil consumers.

Coal Situation

With no great improvement anticipated in gasolines through the summer months, several refiners and marketers are giving special attention to the probable market for fuels. The profits of several plants will be dependent on whether or not a

(Continued on Page 166)

REFINED MARKET BAROMETER

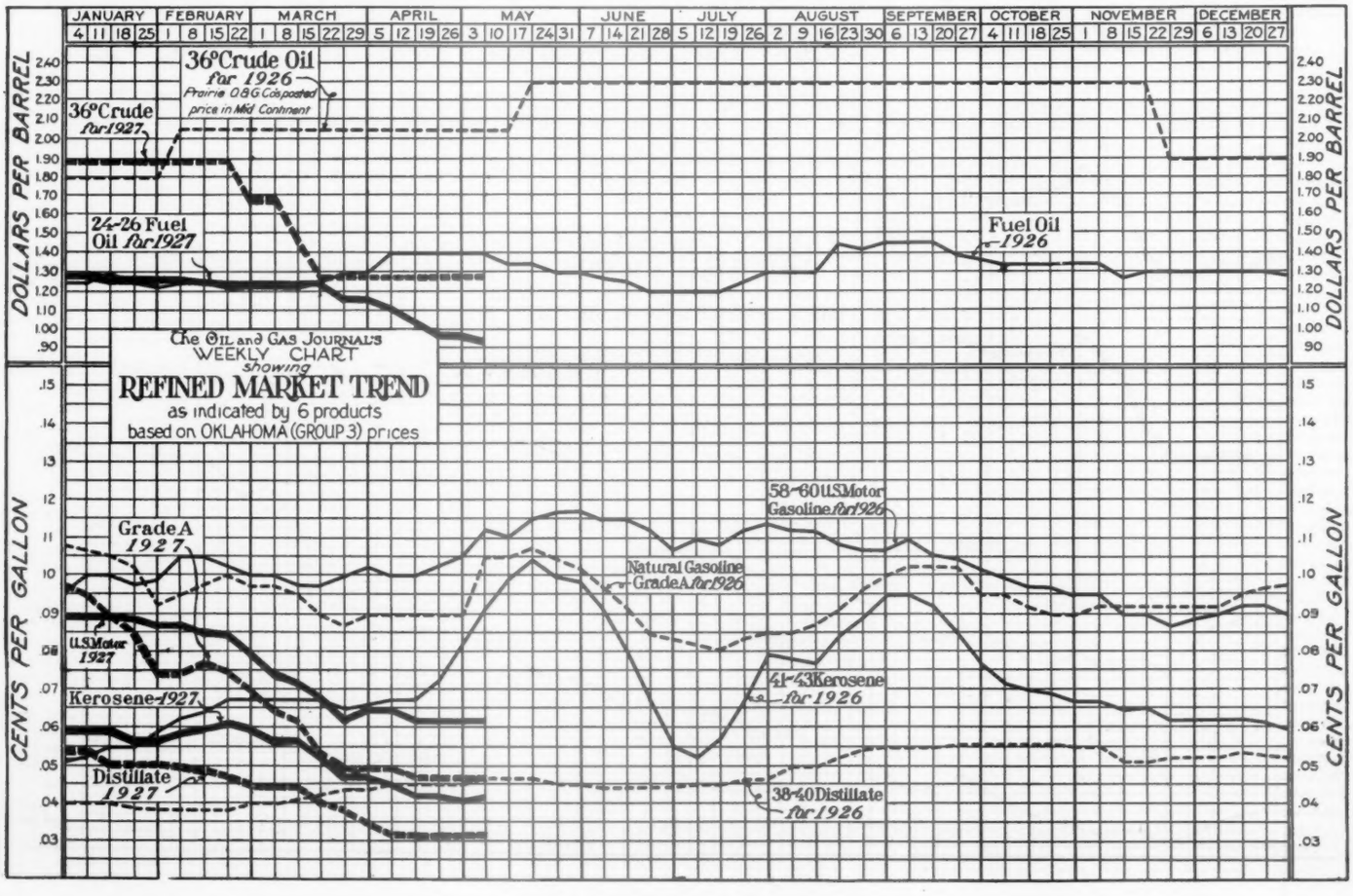
The past week in refined markets brought relatively few price changes throughout the United States. Several refining groups reported the same price schedules on all products as prevailed the previous week. Some improvement in the gasoline demand was apparent in the Middle West, and several refiners serving that territory advanced their domestic grades fractionally. Weather conditions generally were still unfavorable for maximum gasoline consumption. Despite additional tank wagon reductions in eastern states, the domestic prices on kerosene were firm or higher. The advances were confined to the Mid-Continent area. Buyers are still able to secure price concessions on fuel oils from interior refiners for both spot and future deliveries. No additional price reductions developed in gas oils, however, and several refiners in different parts of the country advanced their prices, due to a better demand. Both the eastern and western lub markets continued firm. No important changes developed in natural gasolines. The price trend in wax continued downward.

Mid-Continent—Higher gasoline prices in Louisiana and Arkansas groups, due to a shortage of tank cars, a development of the flood situation. Gasoline prices in other areas either firm or higher than previous week. Fuel oils weak and prices lower. Good demand for gas oils. Natural gasolines firm. No change in other products.

Atlantic Seaboard—Gasoline market continues weak. Fear additional competition from California. Additional tank wagon reductions reflect weakness in refinery market. Fuel and gas oil prices unchanged. Heavier export movement.

Chicago—Better gasoline demand does not aid market. Kerosene fairly active. Fuel oils slow and prices lower. More activity in gas oils.

California—Gasoline prices continue at low levels of previous week, although effort is being made to remedy competitive situation responsible for condition. Other products unchanged.


JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
DOLLARS PER BARREL
36° Crude Oil for 1926
Prairie O&G Co posted price in Mid Continent
36° Crude for 1927
24-26 Fuel Oil for 1927
Fuel Oil 1926
The Oil and Gas Journal's WEEKLY CHART showing
REFINED MARKET TREND
as indicated by 6 products based on OKLAHOMA (GROUP 3) prices
CENTS PER GALLON
Grade A 1927
U.S. Motor 1927
Kerosene 1927
Distillate 1927
58-60 U.S. Motor Gasoline for 1926
Natural Gasoline Grade A for 1926
41-43 Kerosene for 1926
38-40 Distillate for 1926

West Texas Fields Not a Menace

Conservative Operating Methods Will Hold Down Production in a Potentially Rich Oil Area

By C. D. Lockwood

While leaders of the petroleum industry are discussing ways and means of stabilizing conditions and bringing to the earliest possible close this present period of overproduction, operators in one of the greatest potential producing districts of the country have already adopted measures which eliminate this region as a menace. That district is the immense area known as West Texas.

Under competitive drilling conditions, West Texas production could probably be brought up to 175,000 or 200,000 bbls. daily in a comparatively short time. Pecos County could probably contribute 25,000 bbls. of this if only the present proven territory in the Yates Pool were drilled up. Winkler County's lone pool could probably equal that, also. Crane County could add 25,000 to 50,000 bbls. with ease if present proven leases in the Church-Fields and Gulf-McElroy Pools were drilled up, and the newer extension of Upton County's string of pools, drifting continually farther to the southeast, could at least maintain the county's output near its present figure of some 20,000 bbls. and could probably increase it to some extent. Reagan, Mitchell, Howard and other miscelloneous counties can be considered practically constant factors in any tabulation of production estimates.

Unnecessary Drilling Stopped

With all of this potential production, however, the West Texas district will probably not increase 30,000 bbls. during the next three months above its current figure of approximately 101,000 bbls. daily, for the very simple reason that all unavoidable drilling has been stopped. And wherever the leaders of west Texas companies have any control over the situation, no unnecessary tests will be started this summer until a rift appears in the clouds now overhanging the oil business.

The Church-Fields Pool in Crane County is the scene of more drilling operations than anywhere else in the district and due to the prolific nature of the producing horizon found in one or two parts of the field it has been regarded with more concern than any other pool or field. The record well of this pool was Simms Oil Co. and Atlantic Oil Producing Co.'s No. 3 University-A which flowed 4,500 bbls. in the first 11 hours and then had to be shut in for lack of storage. The same companies' No. 2 University-A was the first heavy producer in the field, having flowed at the rate of more than 8,000 bbls. initially. The Eastland Oil Co. and Collett's No. 1 University, a diagonal southeast offset to the Simms and Atlantic No. 2, was another big one with an initial flow of 3,900 bbls. when fully drilled in.

Counting the Simms and Atlantic wells good for 9,000 and 8,000 bbls., respectively, the average initial production of 52 producers in the Church-Fields Pool has been 1,182 bbls. Nineteen of these came in for more than 1,000 bbls. each and 11 tests, mostly on the north side of the area were good for less than 100 bbls.

If the 12 wells drilling below 2,000 feet and the eight tests drilling at various depths above 2,000 feet are good enough to maintain the general average of the pool, they will increase the production only about 23,000 bbls., and natural declines will have to be figured out of that total. The daily average output per well in the Church-Fields Pool is now about 600 bbls.

One Well to 25 Acres

The proven acreage in this pool covers more than three sections of land—more than 2,000 acres. This includes some which might be classed semiproven by an extraordinarily careful statistician, but it is all considered "in the money." On these 2,000 acres there are about 80 rigs, counting producing wells and all drilling operations. That gives each well 25 acres. Another way of showing how the development campaign has been restricted is to point out the only two inside locations which are now being drilled. These are Humble Oil & Refining Co.'s No. 9, and Simms and Atlantic's No. 8 University.

Irregularity of survey lines is causing a little extra drilling down at the south end of the Church-Fields Pool where some independent operators hold tracts which are considered highly valuable. Practically all maps of this area have shown regular survey lines between the University land, Block 30 and Block F of the C. C. S. D. and R. G. N. G. Survey to the south. A few months ago, however, it developed that an irregular vacant strip existed between these blocks and also on the east side of Block 30. Ed Landreth filed on this strip and is now building a couple of rigs on it. The Gulf Production Co. has started a couple of wells along the north line of its McElroy block, offsetting Landreth, and Cromwell & Jones have started their No. 5 along their south line.

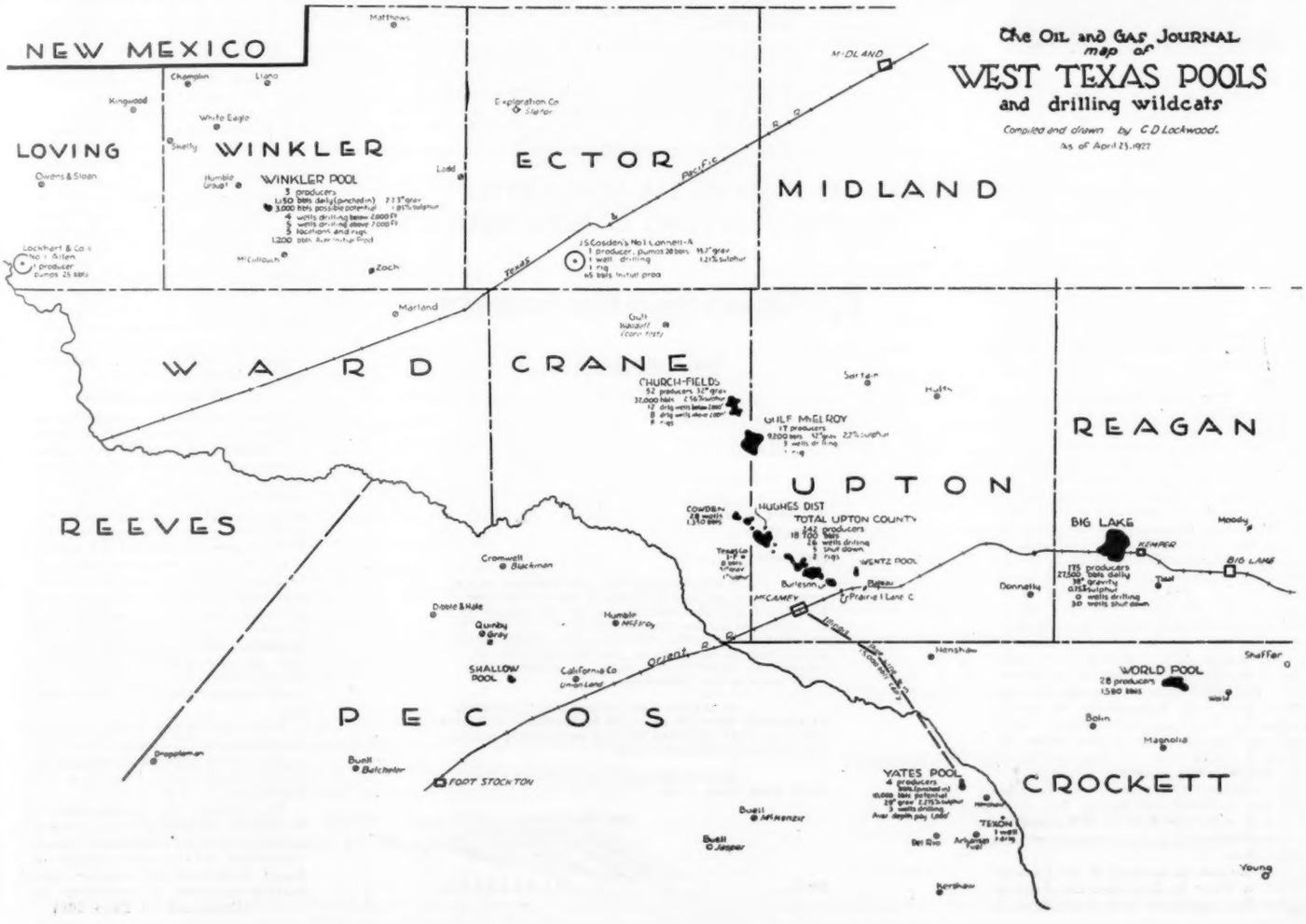
Pools May Connect

It is believed that the McElroy and Church-Fields Pools will eventually be connected, making a continuous field at least 6 miles in length and at least 2 miles wide in some places. The Gulf-McElroy Pool, itself, already embraces a proven area of approximately 2,000 acres in which there are 17 producing wells and four other operations, making about one well to every 100 acres.

Should the two pools be connected, there will be room for something like 300 additional locations in the entire field spaced one to each 10 acres, but it will be many months before the number of new locations totals this amount.

The average initial production in the McElroy Pool has been 1,160 bbls., practically the same as the Church-Fields

(Continued on Page 86)



Preparing to Curb Overproduction

Belief That Industry Can Formulate Plan of Its Own for Consideration by the Federal Oil Board

By L. M. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, May 2.—E. B. Reeser's open letter to The Oil and Gas Journal and the Journal's editorial calling for industrial action in the present overproduction situation have precipitated discussion along the following lines:

1. The desirability of calling a "town hall" meeting of the industry to determine the sentiment in favor of placing

H. F. WILCOX
President, H. F. Wilcox Oil & Gas Co.

the industry's problems squarely before the Government.

2. The desirability of the board of directors of the American Petroleum Institute calling a meeting to discuss the present overproduction situation and to determine what steps the industry can take.

3. The desirability of the industry, through representation made at a general meeting such as the first or through the board of directors of the American Petroleum Institute, petitioning the Federal Oil Conservation Board to hold a meeting where an open discussion of the problems and of remedial measures can be had.

For Open Discussion

The difficulty of getting the scattered interests of the industry together in a general meeting are obvious, and according to opinion canvassed in the East, it is thought that much that could be accomplished in such a meeting can be done through the sounding of sentiment by the trade press. It is felt that the time has arrived for open discussion of the problems involved and that the oil men should show less hesitancy in giving their views. The principal thing to determine at this time is whether the industry should go to Washington with its troubles.

There is no definite date set for a meeting of the board of directors of the American Petroleum Institute, these meetings being held only occasionally as matters come up requiring board action. It is known that in some circles there has been a feeling that the Institute should be active in the present crisis, representing as it does all interests and branches of the industry and having had direct contact with the Federal Oil Conservation Board during its existence of over two years.

At the annual meeting of the Institute held in Tulsa in December the Institute directors appointed two committees to study and devise methods of oil conservation, one of these headed by Judge A. L. Beaty, chairman of the board of The Texas Company, to work on the legal phases respecting co-operation and conservation. As proposed remedies for the present situation largely involve legal angles and as conservation is the keynote of the entire problem, the possibility of this committee concentrating its attention on the immediate question of overproduction has been suggested.

This committee comprises in addition to Judge Beaty, James A. Veasey, Carter Oil Co., Tulsa; C. B. Ames, Oklahoma City; John C. Townes, Humble Oil & Refining Co., Houston; A. L. Weil, General Petroleum Corp., San Francisco; Axtell J. Byles, Tide Water Oil Co., New York, and F. C. Proctor, Houston.

A. P. I. Committee

The pertinency of this committee with respect to the present situation is apparent from the reading of the resolution appointing it. If it is felt that there should be complete clarification of the legal points which operate to restrain the industry from working out its problems in the interest of economy and conservation and that this issue should be met by procuring interpretative opinions from the Department of Justice as regards the application of the anti-trust laws or, in lieu of these, new legislation, the scope of this committee's activities practically covers the field.

The committee was directed to formulate and recommend to the board of directors of the Institute or its executive committee at the earliest practicable date a program of legislation, Federal and state, to be advocated by the Institute giving sanction and effect to agreements by oil producers for the curtailment of production in pools where and during periods when there is overproduction, having for their purpose the economical and orderly production of oil.

The committee has not yet presented its report to the board. It is possible that its work has got far enough along so that it could report to the board of the Institute at an early meeting, and its recommendations could be made the basis of the industry's presentation of remedies to the proper government agencies.

Legal Problems

The activities of the industry with respect to legal recommendations have been characterized by caution, as it has been felt that so many important questions are involved that the fullest consideration and discussion are desirable before any final action is taken. This was pointed out in January by President E. W. Clark of the American Petroleum Institute, when he said: "In responding to the recommendations of the preliminary report of the Federal Oil Conservation Board relative to the conservation of petroleum, the Institute has shown its desire to co-operate with the Government in developing a practical solution of this national problem. The issues involved require careful, painstaking work. There will be no haste in their consideration; there will be the fullest publicity."

The overproduction situation, it is felt by those in agreement with Mr. Reeser, has brought about a state of emergency. The fact that the situation has developed and amounts to a repetition, shows that some avenues of remedy and relief not possible under the purely economic operation of the industry are vitally necessary, in their opinion.

Mr. Clark has gone on record for the Institute that the industry is not seeking an exemption from the Sherman Act or similar laws. The Federal Oil Conservation Board recommended that conservation and prevention of waste could be brought about through agreements by producers, but Mr. Clark pointed out that the board said the voluntary co-operation proposed would need to include the landowners and operators in a single field or pool which is a relatively small unit of production, so that the possibility of monopolistic control need not be forced. The Institute, Mr. Clark stated, wishes to conform to this recommendation, and added: "To do so does not require exemptions. What is desired is to remove by appropriate legislation, as recommended by the Federal Oil Conservation Board, the uncertainty as to whether specific agreements fall within or without the scope of the anti-trust laws."

The Federal Oil Conservation Board, it is known, has kept in close touch with the overproduction situation that has developed recently. That it has not acted can be attributed to a recognition of the limitation of its powers to itself relieve the situation. The board has the power of investigation. If the sentiment in the industry is in favor of opening up the present situation to investigation, it is believed that the board could be prevailed upon to call a meeting in Washington and hear the oil industry. Tentative plans for a meeting in the fall to develop technical material related to the industry have been made. Probably the date could be advanced.

Oil Board's Meeting

At such a hearing a complete survey of producing and refining and marketing conditions could be made with particular reference to the causes and effects of overproduction. A complete discussion of the legal angles could be had. It would be desirable that representatives of the Department of Justice and the Federal Trade Commission attend the meeting.

If testimony were developed at this hearing showing the need for industry and government co-operation and a voluntary spirit on the part of the industry were shown to work out and abide by remedial measures, recommendations along this line by the Federal Oil Conservation Board would carry tremendous weight, it is thought, and bring about early action.

With specific and strong recommendations made by the board, the industry, it is felt, would consider it possible to proceed in directions where it now feels inhibited.

The Federal Oil Conservation Board has already opened the way in the recommendations in its preliminary report. The suggestion for another meeting of the board to discuss and possibly formulate further remedies, is contingent on the

(Continued on Page 168)

INDUSTRY'S LEADERS ON OVERPRODUCTION

Among the articles in this issue of The Oil and Gas Journal dealing with the overproduction problem are the following:

H. F. Wilcox, page 30.
Richard Airey, page 31.
The Lamp (Standard of New Jersey), page 147.
Walter C. Teagle, page 84.
W. J. Donovan, assistant attorney general, Department of Justice, page 168.
Earl Oliver, page 127.
O. P. Keeney, page 135.

READY TO JOIN WITH ANY GROUP IN PREVENTING OVERPRODUCTION

H. F. Wilcox, President E. A. Dyer, Vice President M. P. Applebey, Sec'y & Treas.

H. F. WILCOX OIL & GAS COMPANY
(INCORPORATED)

Tulsa, Oklahoma

April 30, 1927

The Oil & Gas Journal,
Tulsa, Okla.

Gentlemen:

I wish to compliment your Magazine on its efforts toward getting the heads of the oil industry together on some constructive plan for the curtailing of production and the conservation of oil. I think it decidedly a step in the right direction. This Company stands ready at all times to join with any group of leaseholders toward preventing an over-production in pools where we are interested.

Of the few plans we have heard discussed, we decidedly favor the so called unit system. I believe this plan could be worked out very satisfactory and to the advantage of all concerned.

Again complimenting you for your efforts along these lines, I am,

Very truly yours,

HFW/D. PRESIDENT.

Some Action Is Absolutely Necessary

Richard Airey Suggests Change in Manufacture of Gasoline Would Solve Overproduction Problem

65 Broadway, New York
May 2, 1927

The Oil and Gas Journal,
Tulsa, Okla.

"A Challenge to the Oil Industry," written by the president of the Barnsdall Corporation and published in The Oil and Gas Journal, issue of April 28, 1927, is indeed very timely. Within a few brief months the prosperity and strength of the oil industry has given way to financial loss and extreme weakness. All agree that some action is absolutely necessary and must be taken immediately. I take the liberty to offer a constructive plan or method of procedure which would overcome the present critical condition.

My premise is that the oil industry is presently losing money and that the carrying of excessive inventories of either crude or refined stocks will and does act as a threatening feature to market stability. On this assumption, to which I believe everybody will subscribe, there are but three ways or means by which the entire industry, both major and minor, can work itself out of the present chaos and into a stable business position.

These are as follows:

1. Decreasing the throughput.
2. Decreasing or eliminating cracking.
3. Maintain or even increase throughput but reduce yields by manufacture of improved gasoline.

RICHARD AIREY
President Asiatic Petroleum Co. (New York), Limited. Royal Dutch Shell Group.

1. Decreasing the Throughput: This method would place on the refining industry the burden of carrying heavier crude inventories—erection of more storage and darken future outlook by holding such inventories. It would also require mandatory powers as to amount of crude runs which should be apportioned to the different refineries or to a percentage of plants to be shut down, etc. The difficulties involved are apparent.

2. Decreasing or Eliminating Cracking: Here again we are confronted by the difficulty of percentage of runs to be allotted to the various companies. Considering the varied interests involved, it is self-evident that a solution in this respect is out of the question.

3. Maintain or Even Increase Throughput but Reduce Yields by Manufacture of Improved Gasoline: Here I submit a definite and constructive program and one to which everybody can subscribe.

I suggest that a better quality gasoline be manufactured and sold to the public at the same prices as ordinary gasoline. The quality to be based on a final boiling point, not exceeding 400 degrees Fahrenheit. This will reduce the output of gasoline by about 12 per cent.

By this method, we are not circumscribed by possible governmental restriction. Consumption of crude will remain normal or even be augmented. Refineries remain at liberty to run as much or as little crude or cracking stock, as they may see fit.

The (about) 12 per cent left over in the distillation to 400 degrees Fahrenheit is an excellent material with which to make a better quality furnace oil than presently on the market. The use of oil for domestic heating is growing; but if an improved quality is manufactured its use will increase so enormously that it will become a feature almost as important to the refiner as gasoline.

For the last four years, the industry as a whole has manufactured gasoline far in excess of a reasonable quantity. It looks certain that the United States Bureau of Mines will show in the March statistical report, that stocks of gasoline at the end of the month will be at least 50,000,000 barrels. With present manufacturing facilities a stock of about 25,000,000 to 30,000,000 barrels is ample. At present the industry is suffering from this overproduction, for which it has no outlet, therefore, drastic and united action should be taken.

If about 12 per cent less gasoline is manufactured, plus the ordinary increase in consumption, say about 10 per cent, the situation would improve by about 22 per cent. The public would be benefited by receiving a better product and gradually the huge excess stock would decline, and in the course of a few months the industry would be free from this economic loss.

This same principle of manufacturing improved quality gasoline is equally applicable to natural gasoline. A better quality should be made by eliminating the most highly volatile fractions.

I trust that all interested will seriously consider this solution in the spirit in which it is offered, so that the desired results will be obtained as speedily as possible.

RICHARD AIREY
President: Asiatic Petroleum Co. (New York), Limited, Royal Dutch Shell Group.

Principles Underlying Soda Process

Second Article of Series Describing Chemical and Physical Factors in Method of Oil Recovery

By P. G. Nutting*

The system to be dealt with in petroleum recovery is a granular, porous, siliceous material resembling sandstone, saturated with an extremely heterogeneous mixture of hydrocarbons. The grains are usually too fine to be apparent to unaided vision and the pores in such cases are far too fine to admit a fine hair, though the voids run usually about 20 per cent. The material in most instances is too far underground to be mined, crushed and washed at present prices nor can all of the oil be washed from the sand in situ by methods in current use. The dissolved gas has pushed out perhaps a fifth of the oil leaving the voids partly empty of fluid.

The petroleum clings very tenaciously to the silica and silicates composing the sand grains, some of the basic constituents of the oil apparently enter into a weak chemical combination with the silica over its surface. At any rate, the oil is not readily washed off by solvents nor blown off by compressed air, though the larger pores may be cleaned by such means. Making the sand let go of the oil is evidently a chemical problem. Surface tension and selective adsorption yes, but these depend primarily upon chemical forces.

Fresh water will push petroleum from silica, quickly and without hesitation. But the oil always retains a contact with the silica and after some hours together water and petroleum appear to lose their antipathy probably through a slight (.02 per cent) mutual solubility. Water that has remained for some time in contact with petroleum drives it only sluggishly and by-passes a large part of it.

Instructive Experiment

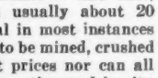
An instructive experiment is to sprinkle some fine dry sand between glass plates cemented a few grain diameters apart. If now water be introduced on one side and petroleum on the other until they meet, a microscope will show sand grains adhering to the water-oil interface on the water side but not on the oil side. In the oil they simply drop to the bottom. If a quarter inch of oil be placed on water in a bottle, then dry sand sprinkled in, the sand will fall through the oil and into the water but will remain suspended in the water on the oil-water ceiling. The lesson is obvious, sand wet with water will cling to oil, even fresh water cannot completely free oil from sand. The chemical problem of water driving oil from sand is to find what may be added to the water to make the sand let go of the oil.[1]

The nearest layers of water are adsorbed on silica with a force of about 17,500 atmospheres pressure, the force falling off as thickness is increased by about 230 atmospheres per molecular layer. These forces are deduced from heats of wetting as described in a paper by the author appearing in the April Journal of Physical Chemistry. This force is of the same order as the tensile strength of quartz and is sufficient, according to the data of Bridgman, to compress water by about 25 per cent. It is probable that the water is in the form of layers of staggered H and OH ions having a strong tendency to hydrate the silica and pull it into solution.

Adsorption Pressure

The petroleum hydrocarbons are much less strongly adsorbed on silica than water. These data have not yet been directly obtained but both surface tension and heats of evaporation lead to calculated values of adsorption pressure about one-tenth that for water on silica or in the neighborhood of 1,500 atmospheres. If water and oil are both present, the water naturally takes the more favored position, next a clean silica surface, instantly and without hesitation. Water does not spread on an ordinary glass surface as does oil because such surfaces are invariably greasy. It spreads freely, without forming drops, over a carefully cleaned glass surface. On the surfaces of sulphides, carbon, or of silicates coated with stiff grease, or with surface films of organic silicates, oil assumes the favored position next the solid surface.

The silica molecule, O = Si = O, has two double-bonded oxygen atoms and is weakly acid in character. The oxygen atoms are not readily replaceable but do readily take an extra atom or ions that are basic, such as H or Na or a hydrocarbon chain such as an alcohol with its OH missing. Sand wet with water apparently becomes



or OSi(OH)$_2$ over its surface; when wet with soda solution, OSi(ONa)$_2$; when wet with petroleum, OSi(OCH$_3$)$_2$, OSi(OC$_2$H$_5$)$_2$, etc. If offered its choice it will choose the strongest base or rather will be chosen by the strongest base to the exclusion of other weaker bases such as H, CH$_3$, C$_6$H$_5$, etc. Simple as it is, this appears to be the whole plot of the story of petroleum recovery by the soda process. Filtering and cracking by means of silica and silicates are almost as simple apparently.

Effective Solution

An effective agent for loosening oil from silica must therefore be a solution containing an abundance of free, strongly basic ions. This means a solution of a salt consisting of a strong base combined with a weak acid. A solution of a salt consisting of a strong base and strong acid (such as NaCl) is not effective because only an extremely small fraction of the basic ions are hydrolyzed on solution in water. The hydrolysis is slight because the strong acid persistently holds the strong base to itself and away from the much weaker acid radicle hydrogen, the weak base OH remaining with the weak acid H.

The hydrolysis of a salt is a combination of its parts with the H and OH of water. In the hydrolysis of sodium carbonate

$$Na_2CO_3 + 2HOH = 2NaOH + H_2CO_3$$

It is the base NaOH which unites with the silica over the surfaces of the sand grains thus displacing the weakly basic petroleum. NaOH solution is useless for driving oil however because when concentrated it fails to drive and attacks the oil and when diluted it becomes used up in a drive of but a few feet. Tests by this writer in July, 1925, showed that a dilute solution of NaOH (about half a gram per liter) drove just as well as Na_2CO_3. High concentrations of sodium carbonate do not attack oil on account of the limited hydrolysis. The per cent hydrolyzed at different concentrations is given below:

Na_2CO_3 (grams/liter)	20	10	5	3
Hydrolysis (%)	2.1	3.2	4.9	7.1

Two Strong Bases

There are but two strong bases available in large quantities, sodium and potassium. Between these there is but little choice as to their action but sodium is much less expensive. There are any number of weak acids which combine with sodium to form soluble salts which hydrolyze freely in water. Here again cost is a deciding factor. No such sodium salt is any better than the least expensive of all, the carbonate. Sodium carbonate dissolves readily up to over 4 normal and the hydrolysis of the dissolved salt runs from 1.5 per cent up, according to the dilution. This is at least 10 times the minimum necessary (0.04N) to permit a rapid and complete coating of the sand grains with sodium hydroxide. As a chemical problem the flushing process is simply that of separating a weak base from a weak acid. The combination is treated with a strong base which appropriates the weak acid (silica) setting the weak base (hydrocarbon) free. Except that the reactions are surface reactions, the chemical procedure is of the simplest.

As the solution passes over the sand grains, some of the sodium is used up and more is hydrolyzed to take its place. A saturated solution of sodium carbonate then feeds down a continuous supply of sodium hydroxide until exhausted. An important advantage of the carbonate over other sodium salts lies in the fact that its acid radicle (CO_3) is a gas and escapes instead of accumulating in the solution and interferring with its action. The amount of soda used up in coating the sand grains is proportional to the area coated and to the thickness of the coating. If an oil sand is composed of grains having an average diameter of 0.2 mm with a surface of about 6.5 x 10^6 cm^2 cubic foot, a layer 30 feet thick will run 1.3 x 10^6 cubic feet per acre, and the least soda or other substances that can be effective is a molecular layer deep or 4 x 10^{-8} cm or 0.65 gram per cubic foot or 1,850 lbs. per acre. However (as explained in the first paper of this series) the only way to apply such a coating is to advance a flow of solution against the oil, the front being depleted of its soda by adsorption on the sand and the rear by slow diffusion into the water behind. Hence the practical question is how far such a solution may advance through sand before its front is depleted of soda to below the useful driving limit of about 1 gram per liter (0.02 normal). This is found by test to be about 300 feet in fine tight sand or 600 feet in coarse loose sand.

In practice therefore instead of 1,850 lbs. per acre we recommend 15 tons so that even the front of the drive will not become exhausted. Even this amount of soda is not a large item of expense—less than the cost of shooting of the well. Tales of substances more efficient or less expensive than soda may be lightly treated for the reasons given above.

Requirements Summarized

In summary then, the chemical requirements for a good driving solution for petroleum recovery are:

1. It must not react with or dissolve in the oil to any appreciable extent so that it may not be used up too rapidly or clog the pores of the oil sand.
2. It must contain strongly basic ions, free in solution in a considerable concentration. This means that it must be the solution of a salt of a strong base combined with a weak acid.
3. The acid radicle combined with the strong base should be gaseous so that it may escape and not accumulate in the solution.
4. It must be nonpoisonous and noncorrosive, for piping is expensive and waste waters find their way into streams. Sodium cyanide and sodium sulphide fail to meet these requirements although they hydrolize to NaOH and drive perfectly.
5. It must not be expensive for the amount required in underground driving is considerable.

Collection and Recovery

After petroleum has been freed from the hold of the sand grains upon it, there

(Continued on Page 106)

*Published by permission of the Director, United States Geological Survey. The first article was published in The Oil and Gas Journal of March 31.

[1]Chemical Problems in the Water Driving of Petroleum from Oil Sand. Jour. Ind. & Eng. Chemistry, October, 1925, and The Oil and Gas Journal, October 1, 1925.

CONSERVATION OF WATER AND HEAT EXCHANGE AT REFINERIES

By H. H. Greene
Secretary, Kendall Refining Co.

The inherent weaknesses of the spray pond for cooling led to the design and improvement of the so-called cooling tower. Originally the tower consisted of timber framework supporting the shell which was filled with brushwood, horizontal slats, tile and other hodge-podge devices intended to catch and retard the water on its passage through from above. The bottom of the shell was left open so that air might freely circulate through by natural draft. Later fans were, in many cases, provided to give increased circulation.

Out of the last-mentioned design has emerged the modern industrial water cooling tower, scientifically designed as it is on the drop-and-film principle and fitted with the required number of many bladed motor-driven fans often 10 feet or more in diameter. As may be readily understood, the modern cooling tower occupies but little ground space as compared with the important work it performs.

The rate of heat exchange between water and air, under the conditions normally found in the modern cooling tower is in direct proportion to the difference between the vapor tension corresponding to the temperature of the water and the vapor tension of the air. Therefore, the total amount of heat exchanged in the tower depends upon the difference existing between the vapor tension of the air entering the tower and that of the air leaving the tower. Hence, the amount of air required to cool a given quantity of water can be readily determined if the initial temperature of the water, the cooling range and the condition of the ingoing air are known.

By this time, I presume, you have begun to ask yourself the question: "Why all this discourse on the Eighteenth Amendment?" Just because the speaker likes H_2O so well is no reason why he should insist upon prescribing it in what may appear to be overdoses for the benefit of the overrefined and undermarketed Pennsylvania refiner. But stay! All this has been but means to an end.

In browsing through a popular handbook of the petroleum industry recently, I ran across the following definition of heat exchange: "Heat exchange is commonly known as a system of heating oil, water or gas by absorbing the heat from some medium that must be cooled." Reading farther, I was confronted with this statement: "The distillation process such as used in oil refinery practice offers unusually good opportunities for the use of heat exchange equipment."

Let me say right here that a great deal of refinery condenser and heat exchanger practice is still carried out by

(Continued on Page 114)

*Paper presented at Cambridge Springs, Pa., meeting of the National Petroleum Association, April 28 and 29.

Varied Program at N. P. A. Meeting

Discuss Manufacturing Problems, Standardization of Tests and Statistics. Prepare for Twenty-fifth Anniversary Meeting Next Fall

By George Turnbull

CAMBRIDGE SPRINGS, Pa., Apr. 29.—Discussion of fire prevention, standardization of testing equipment and methods, a program for statistics of stocks held by the refineries and manufacturing problems featured the semi-annual meeting of the National Petroleum Association which was held at the Hotel Riverside here yesterday and today. The attendance was the largest on record of the spring sessions, nearly 150 being registered

During the fellowship supper initial plans for the fall meeting of the association at Atlantic City were announced. This will be the twenty-fifth anniversary of the organization and every effort is to be made to make it the greatest meeting ever held. The dates were announced as September 14, 15 and 16 by E. M. Lyons who is to be general chairman. O. P. Keeney was named as an exofficio member of all the committees. The following committees were announced for the meeting:

History: H. G. Eaton, chairman; Messrs. Brockway, Chamberlin, Confer, James Fawcett, Fehsenfeld, Fretter, Muir, Wall.

Attendance and Publicity: Howard Greene, chairman; Messrs. L. Carruth, Sheldon Clark, Cordell, Hilliard, McCafferty, Messer, H. R. Lewis, Boler, H. F. Fuller, Woodruff, Murphy, Miskell, Browne, McCammon, G. C. Davison, Anderton, Grant, Gustafson, J. B. Miller, Flynn, Leroux, Beck, Houseman, William Schwartz, Fred Eaton, Heilman, Hawky, F. Von Tacky.

Finance: Otto Koch, chairman; Messrs. Logan, Suhr, Woodman, Hunter.

Banquet and Entertainment: S. P. Worthington, chairman; Messrs. Watowitch, F. G. Clark, Longshore and Jamieson.

Program: P. S. Tarbox, chairman; Messrs. Scott, Moore, Hart, Fritts, James Lewis, Percy Craig, G. S. Davison, Cowden, J. Howard Pew.

Discussion following the reading of the papers featured all the sessions here.

A paper of unusual interest was on "Do You Make Contracts?" by Houston Dunn, secretary and treasurer of the National Petroleum Fire Insurance Co. Mr. Dunn pointed out that the fire insurance policy is a contract entered into by the purchaser and that it should be carefully read by him to make sure that it met the requirements of his industry. He said it was unusual to find a man who actually examines a policy in order to determine what he should do. He told of the obligations imposed on the insured by the standard policy.

Dickinson's Report

Thursday morning's session was devoted entirely to fire prevention and insurance and standards and tests. One of the principal speakers, Dr. H. C. Dickinson, chief of the heat and power division of the Bureau of Standards. Doctor Dickinson said that the first task of the department in respect to the oil industry was the standardization of the Saybolt viscometer, and that since that instrument has changed greatly. He told of considerable study of flash and fire tests and said the oxidation test is also being developed the Government being interested in that method of comparing lubricating oils.

He described the work of the division of heat and power when during the war the allied representatives were in this country to investigate aviation gasolines, an altitude laboratory was constructed which is the only complete installation of its kind still existing. The French wanted a high volatility gasoline and the laboratory made tests of gasoline at all distillation ranges from which was determined the basis of the present aviation gasoline standards. The fuel knock problem had been of interest to the department for some time and it is being taken up from a basic scientific standpoint. In order to measure the rate of progress of the flame in relation to the compression, the mixture is exploded in a soap bubble.

Doctor Dickinson explained the joint research on motor fuels One of the first problems was the effect of gasoline volatility on gasoline consumption. The tests showed that as far as miles per gallon there was little difference. The dilution of crankcase oil increases as the volatility goes down, and is greater in winter than in summer. This is being remedied in many of the new designs of automobiles and soon all of the better cars will be able to take care of it. After 200 or 300 miles of driving the crankcase dilution becomes stationary.

Standardization of Tests

A study as also been made of the volatility of gasoline in relation to the starting of automobiles, Doctor Dickinson said. He also told of the problem of engine acceleration, the devising of a standard test for fuel performance and the considering of consistency. The department is working on physical tests for greases instead of chemical because of the expense involved in the latter.

A paper on "Standardization of Cylinder Stocks" by J. B. Fisher of the Kendall Refining Co., was read by Howard H. Greene of the same company. This paper stated that it was the consensus of opinion in the Bradford group that the first thing done on standardization should be the standardization of tests, for "as long as there are discrepancies standardization is not possible."

PAPERS PRESENTED AT N. P. A. SESSION

Papers presented at the N. P. A. meeting at Cambridge Springs, Pa., will be found in this issue as follows:

By A. W. Scott.....Page 162
By V. I. Downey.....Page 33
By H H. Greene.....Page 32
By E. U. Lyons.....Page 84
By H. E. Newell.....Page 168
By Frank Berry.....Page 156
By Paul C. Girard.....Page 154

The paper by J. B. Northrup on central station power was published on Page 162 of The Oil and Gas Journal of April-28.

There was a considerable discussion on the possibility of collecting stock statictics and, upon motion of E. M. Lyons, the chairman was authorized to appoint a committee of three members to investigate the possibilities of a system of stock statistics for the association, to report as soon as possible.

Ross' Report

Herbert A. Ross who has been serving several of the eastern refineries in the capacity of consulting engineer specializing in steam combustion problems gave a report of his findings and outlined plans for the coming year.

"Last year our activity was to be confined to a study of your steam production problem," Mr Ross explained. "Because of the progress made it was deemed advisable this year to undertake a study of combustion under your stills and other fractionating equipment. Your boiler conditions were bad. I hardly know what to say of your still situation. I cannot recall that in conducting tests in some 22 refinery boiler houses last year I found a fuel efficiency much lower than 40 per cent. I have scarcely made a start on the stills yet, and I have found fuel efficiences of less than 10 per cent. If a pound of coal contains 13,500 B.t.u.'s, only 1,350 of these was absorbed by the oil, and the rest went up the stack. I have encountered flue gas temperatures of 1,800 degrees Fahrenheit after leaving the still, when the oil in the still was not over 600 degrees Fahrenheit. This is a difference of 1,200 degrees per pound of flue gas.

"I have found excess air in the flue gases of over 900 per cent, indicating a preventable fuel loss of approximately 80 per cent. This means that over eight times as much air was permitted to enter the still setting as was necessary to support combustion of the fuel. I have noted the still fireman heave a large quantity of coal on the fire to reduce the furnace heat and shortly afterwards haul the whole business out when the still was off. I have noted numbers of stills when the furnace temperatures were so low that the gases distilling from the coal could not possibly ignite. The direct result was noticeable in dense clouds of heavy black smoke issuing from the stack and enveloping the entire plant."

Fire Marshals

James H. Herbert, president of the Fire Marshals Association, told of the accomplishments of that phase of the national association's activities. His report was largely confined to the work of a group of 10 refiners whose fire marshals have been co-operating with the view of reducing fire hazards at their plants. These fire marshals as a group make an inspection of plants to determine fire hazards and then make recommendations to the fire marshal in charge as to how these hazards can be eliminated. Mr. Herbert said excellent results were being obtained from this co-operative agreement.

Fayette B. Dow told how for years he knew only the executives of the member concerns of the National Petroleum Association but that "we have had to drill only a little deeper and we have opened up some fine producing sands." He praised the interests being taken in the association by the younger men connected with the plants.

Dr. E. J. Reese, chairman of the power conference recently held at State College, said it furnished an opportunity for the oil and the automotive men to get together and also was of benefit to the students.

New Refining Methods

The section of the association devoted to manufacture was in charge of B. B. Stroud who said seven gas recovery plants have been installed and two circulating pipe stills have been built which show a great economy in fuel consumption. He also reviewed the developments in respect to fullers earth. Contact filtering, he said, was another development, "and it is really remarkable to see one press working about 10 to 12 hours handling the output of 12 filters." Association members have spent $3,000,000 for plant improvements during the year. Mr. Stroud said a great deal of help was obtained by the exchange of views and said "I do not believe there are so many secrets in the refining industry."

There was a large attendance Friday afternoon at the meeting of the traffic men, in charge of Willis Crane, traffic

(Continued on Page 114)

DEFINE FLASH AND EXPLAIN METHOD OF MAKING NEWEST TEST

By V. T. Downey*
National Refining Co.

The definition for flash point, as given by Redwood, is as follows: "The flashing point or flash point of an oil is the empirical temperature at which it gives off sufficient vapor to ignite momentarily on the introduction of a flame or spark, when the oil is heated at a given rate, in an apparatus of iven construction and dimensions, and a definite igniting agent is applied in a given manner."

This definition is almost invariably misquoted by the nontechnical man as follows: "The flash point of an oil is the temperature at which it begins to give off inflammable vapors."

This misquoted definition of flash point has been misused in sales propaganda more than any other physical test of lubricating oils. It has worked to the advantage of the refiner of one type of crude and the disadvantage of another. The misconception has grown until an element of danger, inferiority and instability is now associated with an oil of relatively low flash point.

The use of flash point as a safety standard in connection with the use of kerosene and naphtha is justifiable. Any oil starts to give off inflammable vapors at a much lower temperature than its flash point. It is the character of the vapors formed and their concentration which determines the point at which they will flash.

As far as I have been able to determine, we have no authentic information on the type of hydrocarbon formed by the decomposition occuring during the making of a flash test. We are told that the amount of decomposition is proportional to the amount of heat applied and to the time of exposure to such heat. By varying the rate of heating we can vary the amount and type of hydrocarbon vapors given off. We are, therefore, justified in demanding that the greatest of care be exercised to heat all samples at a uniform rate so as to get a uniform type of vapor as well as to control the concentration.

With the Cleveland cup, where no provision is made for stirring the oil, it is impossible to prevent the oil from becoming considerably higher in temperature next the sides of the cup than in the center. This means that the vapor concentration is greater at the point where the igniting agent is applied than over the center of the cup.

With testers of the Pansky-Martens type, where a stirrer is employed, an even distribution of heat is obtained and the error due to air currents is greatly reduced. Our Standards department has given a great deal of thought and time to the subject of a suitable thermometer for the flash test. In our group meetings we have found only one criticism. It is reported that in some thermometers a distinct lag is noticeable. The error traceable to this lag is reported to be as high as 10 to 15 degrees Fahrenheit. It is agreed that error due to faulty thermometers can be eliminated by check-

(Continued on Page 86)

*Paper presented at Cambridge Springs, Pa. meeting of National Petroleum Association, April 28-29.

Gas Men Meet in Cincinnati Next Week

Program Replete With Discussions of Subjects of Interest to Every Company. Record Attendance Predicted

By Andrew M. Rowley

Great strides made by the natural gas industry in solving the many problems which confront it; in obtaining government aid and backing in its campaign of conservation and better utilization of Nature's wonder fuel; in overcoming prejudices on the part of the public and creating good will to the extent that in some cases communities actually have voluntarily voted increased rates—these and other factors along the same line often have caused considerable discussion on the part of men connected with other branches of the great petroleum industry. There seems little doubt that one reason for the success of the natural gas industry along these lines may be traced to the conventions of men engaged in the natural gas business where the various problems of the industry are discussed frankly and where experiences are exchanged to mutual advantage.

This fact is emphasized by the program arranged for the twenty-second annual convention of the Natural Gas Association of America and the Natural Gas Supply Men, Inc., which will be held in Cincinnati beginning next Monday and extending through May 12. In addition to papers on subjects of interest to every company engaged in the production, transportation and distribution of natural gas, written by men who have made intensive studies of these subjects and who, by reason of their positions are especially able to tell what actually has been done and is being done in regard to questions discussed, practically one full day of the convention will be devoted to a big round-table discussion of questions arising almost daily in the life of every natural gas company.

N. C. McGOWEN
Vice President, Natural Gas Association of America

GUY F. BATCHELOR
Secretary, National Gas Association of America and Natural Gas Supply Men, Inc.

RALPH W. GALLAGHER
President, Natural Gas Association of America

This round-table discussion, in which every man attending the convention not only is invited but urged to join, permits everyone attending the meeting to learn what has been done in regard to the problems discussed in almost every section of the United States and gives to all the benefit of the experiences of men charged with the solving of these problems for the different companies.

Of equal importance to the industry as a whole is the work carried on throughout the year by various committees of the association appointed to study special problems and features of the business. Reports of these committees will be read and discussed at the convention. The natural gas industry long has seen the need of extensive research work and technical committees working in conjunction with the United States Bureau of Mines, with committees of other associations connected with the petroleum industry, such as the Association of Natural Gasoline Manufacturers, and through the establishment of the testing laboratory at Cleveland, Ohio, under the general auspices of the American Gas Association have made great progress in standardization of methods, practices, equipment and in the elimination of waste and better utilization of gas.

Of especial interest to natural gas men throughout the country will be the paper by N. C. McGowen, vice president of the association, president of the Palmer Corp. of Shreveport, La., and chairman of the southwest division of the association on "Meeting the Natural Gas Problems of the Southwest." At the annual convention of the association held last year in Tulsa, the southwest division was authorized, and Mr. McGowen given charge of the work of creating it. It was realized many problems confronting the natural gas industry in the Southwest were different from those gas men in the North and East had to face, and the southwest division was formed to permit men in the States of Oklahoma, Kansas, Louisiana, Arkansas and Texas to meet and discuss these problems.

Southwest Division

The wisdom of this move was proved long ago, in fact, at the first regional meeting held in Tulsa last January, and further emphasized at the second meeting held last month in Dallas. At the Dallas meeting it was said there was a possibility 500 natural gas men in the Southwest would be members of the southwest division by the time the annual convention is held in Cincinnati. George McQuaid, former newspaperman and long experienced in public utility matters, is secretary of the southwest division, and to Mr. McGowen and Mr. McQuaid is given credit for the almost phenomenal success of this division of the national association during the brief period of its existence.

All indications at this time are that the Cincinnati convention will be one of the largest, if not the largest, in point of attendance in the history of the association. The central location of the Queen City in relation to the big natural gas industry of the East makes it an ideal place for a convention of natural gas men. The association held its sixteenth annual meeting in 1921 in Cincinnati. Arrangements have been made for special Pullmans to be attached to trains from various sections of the country to carry gas men to the convention.

Officers of the Natural Gas Association of America are: Ralph W. Gallagher, president The East Ohio Gas Co., Cleveland, Ohio, president; N. C. McGowen, president The Palmer Corp., Shreveport, La., vice president; Guy F. Batchelor, secretary. Fred A. Miller of the S. R. Dresser Manufacturing Co., Bradford, Pa., is president of the Natural Gas Supply Men, Inc., and Mr. Batchelor is secretary.

FRED A. MILLER
President, Natural Gas Supply Men, Inc.

GEORGE McQUAID
Secretary, Southwest Division, Natural Gas Association of America

PROGRAM FOR CINCINNATI MEETING OF THE NATURAL GAS ASSOCIATION

MONDAY, MAY 9 (Eastern Standard Time)

9:30 a. m. Opening of exhibition by Natural Gas Supply Men, Inc., in both wings of Music Hall Buildings, Elm Street. The Appliance Hall will be open to the public from 2 p. m. to 10:30 p. m. daily, except Monday, May 9.

10 a. m. Meeting of the Technical and Research Committee and sub-committees, Hotel Sinton.

12 Noon. Luncheon will be served in rear of Machinery Hall adjoining Auditorium, free to all members wearing badges and holding luncheon tickets, obtainable Monday, Tuesday and Wednesday at Registration Booth in foyer of Auditorium. Compliments of Natural Gas Supply Men, Inc.

2 p. m. Annual meeting, Natural Gas Supply Men, Inc., in Auditorium.

4:30 p. m. Annual meeting, board of directors of the Natural Gas Association of America, Hotel Sinton.

6:30 p. m. Annual dinner, board of directors of the Natural Gas Association of America, Hotel Sinton.

8:30 p. m. Vaudeville and smoker, Roof Garden of Hotel Gibson. A free ticket will be handed to each member at the registration booth when registering. Compliments of Natural Gas Supply Men, Inc.

TUESDAY, MAY 10

9:30 a. m. Meeting of the Natural Gas Association of America, Auditorium of Music Hall. Presiding, R. W. Gallagher, president; N. C. McGowen, vice president.

Call to order. Invocation: Rev. Albert Neilson Slayton, rector, Calvary Episcopal Church, Clifton, Cincinnati.

Address of Welcome: Hon. Murray Seasongood, mayor of Cincinnati.

Response: L. K. Langdon, Esq., The Union Gas & Electric Co., Cincinnati.

(Continued on Page 164)

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TO GREATER PROFITS

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Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle

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STARTING SOMETHING

The oil industry is going to do something about overproduction.

That was made clear by the nation-wide comment upon the letter from Mr. E. B. Reeser published in The Oil and Gas Journal last week.

What form that action will take awaits, of course, the reasoned judgment of the industry but there can no longer be any question that the industry is determined to work out a solution.

It will have to, because the existing situation forbids the customary expedient of waiting until the operation of supply and demand rectifies conditions. Low prices have been relied upon in the past to discourage development until supply was readjusted to demand but the present situation is unprecedented and the prolongation of prices below cost threatens incalculable injury to the settled production of the country which must be our mainstay when the flush fields have passed.

This is the phase that is emphasizing the urgency for action, impressing on all the imperative importance of tackling the question at once.

The industry cannot afford to wait during months of deliberation while the crisis continues. Irreparable harm will be done that must be avoided by immediate action.

Suggestions have been considered, such as a conference of the industry, or a meeting of the board of directors of the American Petroleum Institute, or another hearing before the Federal Oil Conservation Board.

But before definite action can be expected from any of these suggestions there must be frank and open discussion throughout the industry so that there may be the fullest understanding of what can be done.

The opinion of the industry can thus be crystallized into specific proposals that can be developed into an intelligible and practical policy.

The manner in which the industry has accepted Mr. Reeser's suggestion of public presentation of personal views encourages the belief that this method will bring out a workable plan.

During the past week The Oil and Gas Journal has received many letters commending Mr. Reeser's letter and The Journal's offer to give space to suggestions, and, what is extremely to the point, each and every writer has put forward a concrete proposal.

This is the way to get somewhere. If every leader in the industry will come out with a helpful suggestion it will be possible to arrive at an agreement that will be of some benefit.

Of course, there will be radical differences of opinion at the outset but the industry is today accepting as commonplaces ideas and methods that once were hooted as impracticable and impossible.

Every human improvement has passed through the same stages. It has simply been a case of proving all things and holding fast to that which is good.

The immediate need of the industry in dealing with the present emergency is to find its voice, to shake off the fear that it may bring another governmental persecution upon itself.

Frankly, no matter what the record of the past may have been, no matter how often the oil industry has been probed and pilloried, there never was a time when oil men stood as good chance of getting a fair and square deal from the Government as right now.

The appointment of the Federal Oil Board by President Coolidge was feared by many, yet now all agree that it was the first time the government and the oil industry had an opportunity for unbiased conference on the situation of the industry.

The Oil Board's preliminary report showed the result of that conference in a helpful attitude. The disposition at Washington, shown by President Coolidge, the Oil Board, Secretary Hoover, and the Department of Justice through Mr. Donovan, has been marked by readiness to assist the industry in solving its own problems.

Secretary Hoover's outspoken appreciation of the industry's problems, voiced in his famous interview given to The Oil and Gas Journal October 25 last, and his position as a member of the President's Oil Board and as head of the department of the cabinet including the Bureau of Mines, the government agency which deals most intimately with the oil industry, singles him out as particularly qualified to assist with counsel.

Unfortunately the industry has moved slowly, possibly because it was difficult to realize that any good could come out of Washington after so much experience of the reverse; probably, too, because the problems were so complicated by differences of opinion within the industry and by relations outside the industry with landowners and laws and customs.

But the present overproduction dilemma is so much greater than ever before and the usual remedies have proved so utterly futile in effect, that it forces all other considerations out of mind except the dire and immediate need for some constructive action.

Mr. Donovan, of the Department of Justice, reiterates, through Mr. Kern, the Washington correspondent of The Oil and Gas Journal, his readiness to hear any plan the oil industry may devise for dealing with the problem. If a plan presented transcends the law he will so advise. In that case it should be possible to amend the plan by eliminating the flaws and again submitting it for examination.

The object sought is to curtail overproduction. The means must be by agreement within the industry. The Government through the Oil Board has approved such agreement in certain fields. It is up to the industry to work out similar agreement where necessary.

Waiting for the Government to do something to clarify the law will be of no service in the existing emergency. The industry must take the first step itself. It must make up its mind what it wants to do and then find out if it will be allowed to do it, if not in one way, then in another.

Fortunately there is every sign that Mr. Reeser's letter has aroused just such a determination to put the issue to a test by actual action.

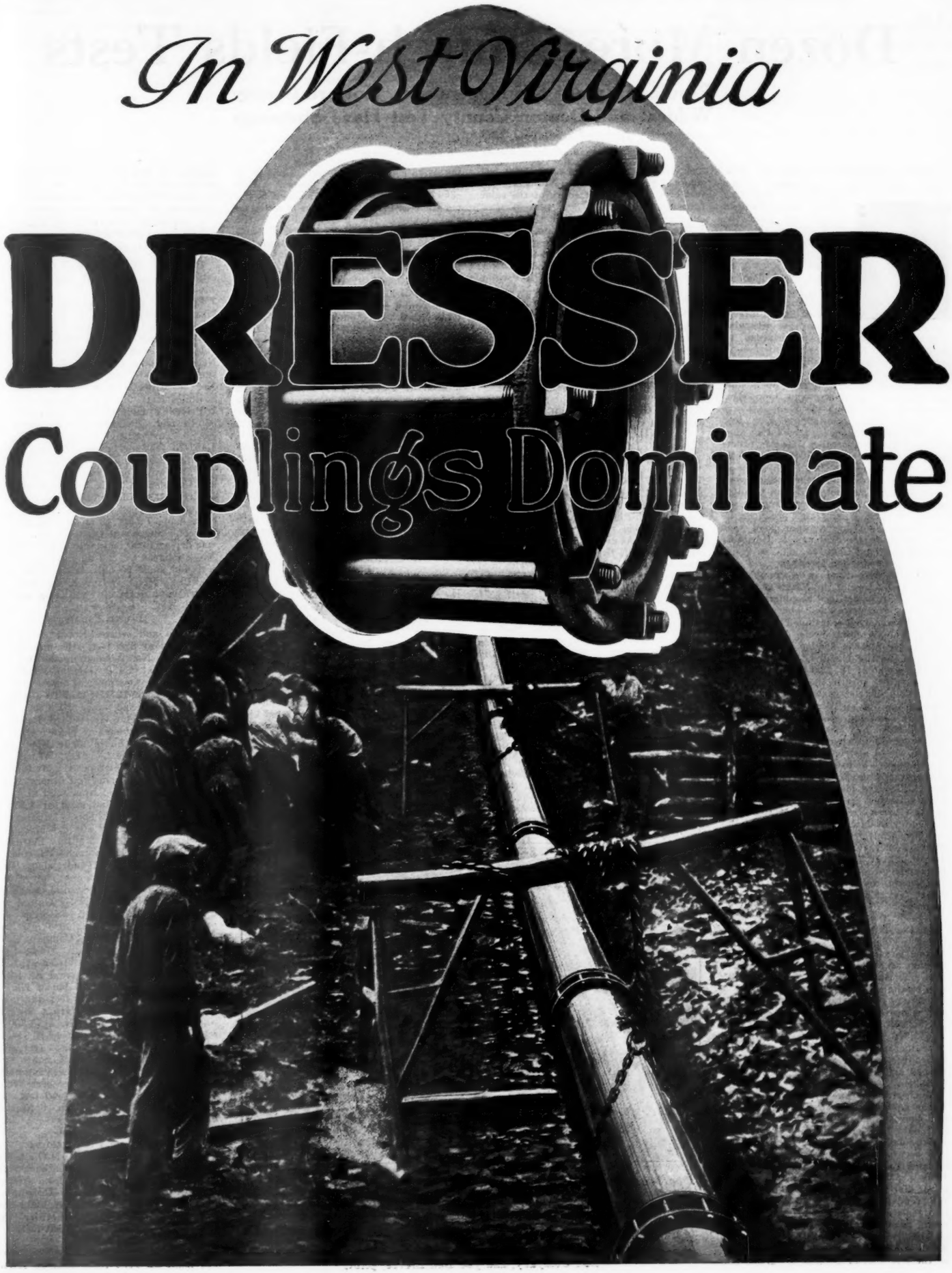
The big men in the industry, the heads of large corporations, should be the first to speak out. The smaller men are hungry for leadership. They know the urgency of the situation because they are the chief sufferers, but their plight will react upon the entire industry which must turn to them when the flood of oil eventually ends.

(Continued on Page 39)

In West Virginia

DRESSER

Couplings Dominate



Dozen More Church-Fields Tests

Result of Vacant Strip Operations. Howard County Wildcat and Denton County Test Have Showings

By C. D. Lockwood
Staff Correspondent, North and West Texas

FORT WORTH, Tex., May 2.—Continued curtailment of operations in the North and West Texas districts is shown in reports from the field this week, and few developments of an interesting nature turned up. The Church-Fields Pool in Crane County is the scene of most interest in West Texas largely because an irregular survey line along the south edge of Block 30 left a vacant strip which has caused the drilling of a dozen or so more tests than would otherwise have been drilled, but the total operations in this pool, including the new rigs, amount to only about 45.

Howard County contributed a wildcat oil showing, but it doesn't look like anything of much importance; Denton County, just north of Fort Worth, also broke into the prospective list with a good showing; some excellent completions were added to the Fry Pool in Brown County, as usual; northern Brown County obtained its first commercial producer in the Caddo lime and another good well was added to the Thomas & Reynolds Pool of Eastland County.

Production Declines

For the first time in a number of weeks, production of the North and West Texas territory declined considerably, the net loss having been 3,505 bbls., although West Texas itself continued to gain a little. The Wichita Falls district was responsible for the decline in the whole territory, having dropped 3,475 bbls. from its high point of 107,250 bbls. last week. A drop of 895 bbls. in the Ranger or Central West district was made up by a gain of 865 bbls. in West Texas, the latter district having produced an estimated 102,545 bbls. daily last week. In all probability, production will decline in at least two of these districts next week unless some unusual wells are brought in during the next few days. West Texas production, of course, depends upon the outcome of a few wells nearing completion in the Church Fields Pool and also upon the policy of Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co. in the Yates Pool of Pecos County. If the four producers in that field remain shut in, West Texas should gain very little next week, and general declines in the older parts of North Texas will more than offset this increase.

Church-Fields Pool

In the Church-Fields Pool of Crane County, Tidal Oil Co.'s No. 1 University-F, one location south of the NE cor. of Section 46, Block 30, came in for 1,679 bbls. initial at 2,875-2,938 feet. This offsets Eastland Oil Co. and Collett's No. 2 University which caught fire last Friday when it was shot with 90 quarts at 2,887-2,950 feet. Top of pay in this well was 2,866 feet and it was estimated to have increased from 800 bbls. to 2,000 bbls. after the shot although the rig was burned and an accurate gauge could not be taken.

Much trouble has resulted in West Texas from the inaccuracies of the original surveys made when this country was laid out. The most valuable "vacancy" which has yet been discovered in the records occurs between the University Block 30 and the Gulf Production Co.'s McElroy property in Block F. It is a strip about 400 feet in width extending across the trend of the production between the two pools and is now owned by Ed Landreth, who is building three rigs on it and has two more offsets to protect. His No. 1 is 990 feet east and 200 feet south of the SW cor. of Section 47, Block 30, and No. 2 is 330 feet west and 200 feet south of the same corner. No. 3 is 1,650 feet east and 200 feet south of the same corner.

Carl Cromwell and Pickrell's No. 4 University is a new location, 330 feet each way from the SW cor. of Section 47, and No. 6 is 1,650 feet east and 200 feet north of the SW cor. same section. Simms Oil Co. and Atlantic Oil Producing Co.'s No. 2 University-D is 330 feet each way from the SE cor. of Section 46, north offset to Landreth's No. 2.

Gulf Production Co. has five rigs building along its north line offsetting this vacant strip, No. 12 being in the NE cor. of Section 201, and Nos. 14, 11, 13 and 15 being regular locations along the north line of Section 200, in that order beginning at the NW cor. of the section.

Simms Oil Co. and Atlantic have made a location for No. 3 University-C in the C SW NE NW Section 47, offsetting Eastland Oil Co. and Collett's No. 7 University, and both rigs are building.

This week there are 18 rigs built or building, 7 wells drilling at depths less than 2,000 feet, 12 wells drilling below 2,000 feet and 7 uncompleted oil wells in the Church-Fields and Gulf-McElroy Pools together.

Simms & Atlantic's No. 7 University-A, SW cor. SE Section 39, offsetting the good producers of Church & Fields and Independent Oil & Gas Co., was flowing 75 bbls. an hour this week from pay at 2,867-2,968 feet.

Good Well in Eastland

In the Thomas & Reynolds Pool of Eastland County, the M. T. C. Oil Co.'s No. 1 McAllester, NW cor. SW Section 13, Block 3, H. & T. C. Survey, topped the back lime at 2,970 feet and found the Marble Falls pay at 3,005 feet. While still drilling at 3,013 feet, it was flowing 16 bbls. an hour.

Howard County's showing was contributed by Marland Oil Co.'s No. 1 Harding, C SE Section 19, Block 33, T. & P. Survey, T-1-S. It topped the pay at 3,163 feet and filled up with about 1,200 feet of heavy black oil at 3,187 feet. It was drilled to 3,228 feet and then the 8-inch was landed at 3,010 feet. At latest reports it was undecided whether to resume drilling or to shoot this showing. Gravity of the oil corrects to 23.6 degrees. This showing compares in many respects to the old General Petroleum Co. wells in Glasscock County, just a few miles to the south, which were drilled several years ago and never amounted to anything.

In Winkler County, Pure Oil Co. is building a rig for No. 2 Central State Bank of Abilene, SE cor. SW Section 41, Block B-5, offsetting Texon Oil & Land Co.'s No. 1 and also Gulf Production Co.'s No. 6.

In Denton County, Jones & Eubank's No. 1 Waide, in the center of their tract out of the Thomas Carpenter Survey, near the Cooke County line, and several miles northwest of Bolivar, drilled into a sand at 1,771-74 feet with a big bit and immediately shut down for orders. This will extend the Cooke County production about 10 miles to the south if it proves to be a proudcer.

In Brown County, Cranfill & Reynolds' No. 1 S. D. Stone, Section 157, E. T. R. R. Survey, topped the lime at 1,974 feet, had a show of gas a 1,981 feet and was drilled to 2,265 feet, then plugged back to 2,136 feet and shot with 140 quarts at 2,112-31 feet. It is estimated good for 100 bbls. This is the first Caddo lime production in the northern part of Brown County.

Fry Pool

The Texas Company's Lowe lease in the Fry Pool looks better all the time. Production on this tract May 1 was 4,345 bbls. and May 3 was 4,424 bbls. The company's No. 34, almost in the center of the lease, was drilled in last week and had 27 feet of sand. It made 532 bbls., 590 bbls. and 540 bbls. in three days over the week-end.

J. K. Hughes Developing Co.'s No. 8 Shore in the same pool was a fine well making 1,500 bbls. initial at 1,286-1,312 feet. Tower & McKenna's No. 3 Shore made 225 bbls. at 1,322-36 feet, and No. 6 made 550 bbls. at 1,310-30 feet.

In Upton County, Simms Oil Co.'s No. 1 Clark, NE cor. SW Section 5, G. C. & S. F. Survey, has been found on resurveying the section to be located just 2 feet from Roxana Petroleum Corp.'s line. Roxana owns the SE quarter of the section. It has not been determined yet whether to skid the rig or not. The well is down 975 feet and looks good for an extension of Upton County production.

The broad open spaces of West Texas are not always open—open to fast travel via railroad or overland. To make a fast trip three oil men used an airplane to return from McCamey to Fort Worth, Tex. The air time was 3 hours, 15 minutes and by rail it is a 12-hour trip. Reading from left to right: F. J. Adams, general agent in North and West Texas for the Gulf Production Company; W. H. Dunning, Jr., Fort Worth oil operator; Underwood Nazro, second vice president of the Gulf Production Company, and Joe Ben Lievre, pilot.

NORTH CENTRAL TEXAS COMPLETIONS

Archer County

Barnsdall Oil Corp.'s No. 1 Haley estate was a failure at 2,000 feet. So was Boller and others' No. 1 Farmer at 1,361 feet. Continental Oil Co. & Perkins & Cullum's No. 1 Wilson found sand at 1,223-33 feet and made 70 bbls. Kell & Kruger's No. 6 Prideaux made 40 bbls. from sand at 716-49 feet. Pace & Nelson Holding Co.'s No. 1 Wilson had sand at 900-07 feet and made 10 bbls.; No. 5 Miller-B swabbed 35 bbls. at 904-06½ feet. Park Petroleum Co.'s No. 1 Prideaux made 50 bbls. from sand at 650-61 feet. Petroleum Producers Co.'s No. 6 Turbeville-C found oil sand at 1,457-73 feet and made 340 bbls. Roberts Oil Corp. and Hunt & Seigler's No. 1 Walsh was a duster at 1,440 feet. Roxana Petroleum Corp.'s No. 5 Abercrombie & Taylor-B was flowing 14 bbls. at 1,344-65 feet. Shappell Oil Co.'s No. 11 Prideaux made 7 bbls. from oil sand at 667-84 feet. Successful Oil Co.'s No. 1 Moss was dry at 1,000 feet. Western Oil Corp.'s No. 2 Prideaux found oil sand at 597-603 feet and made 55 bbls. initial from sand at 645-57 feet. Wilson & Russell's No. 9 Prideaux made 30 bbls. from sand at 656-69 feet.

Brown County

Burton and others' No. 1 Jones was abandoned at 325 feet. Empire Gas & Fuel Co.'s No. 2 Newton was dry and abandoned at 1,490 feet. Florence Oil Co.'s No 4 Newton was shot with 12 quarts at 1,261-79 feet and 10 quarts at 1,255-66 feet and made 10 bbls., total depth 1,295 feet. Gibson Oil Co.'s No. 1 White was a duster at 1,770 feet. J. K. Hughes' No. 8 Shore made 1,500 bbls. at 1,286-1,312 feet. May, Ward and others' No. 1 Byler was a failure at 1,310 feet. McKenna and others' No. 3 Shire made 225 bbls. from sand at 1,322-36 feet; No. 6 found sand at 1,310-30 feet and made 550 bbls. Pandem Oil Corp.'s No. 1 Turner was dry and abandoned at 1,770 feet Phillips Petroleum Co.'s No. 5 Hickman made 98 bbls. at 1,222-38 feet after a 20-quart shot. Root and others' No. 3 Pugh was shot with 4 quarts at 1,315-36 feet and made 15 bbls. Simms Oil Co.'s No. 1 Gaines was a duster at 1,504 feet. Sorrells and others' No. 1 Cross was also a failure at 1,631 feet. The Texas Company's No. 1 Byler made 90 bbls. at 1,274-98 feet; No. 18 Hickman was a duster at 1,253 feet; No. 34 Lowe had sand at 1,279-1,302 feet and made 324 bbls.; No. 41 found sand at 1,268-1,314 feet and made 715 bbls. Wentz Oil Corp.'s No 12 Shore was flowing 40 bbls. at 1,300-10 feet; No. 13 found sand at 1,318-34 feet and made 160 bbls. at 1,325-34 feet after a 10 quart shot; No. 14 was shot with 5 quarts at 1,326-36 feet and was estimated at 50 bbls. Westbrook and others' No. 1 Turner was a failure at 1,510 feet. So was Zoch & McCamey's No. 1 Starkey at 1,500 feet.

Callahan County

Deep Rock Oil Co.'s No. 1 Gorsuch was a duster at 2,100 feet. Prairie Oil & Gas Co.'s No. 2 Baum was plugged back from 2,050 feet and made 8 bbls. from sand at 1,650-60 feet. Shadbolt & Creighton's No. 1 Alvord was a failure at 1,202 feet. Shaw and others' No. 3 Miller was junked and abandoned at 1,649 feet.

Clay County

Empire Holding Co.'s No. 3 Barry, Jr., made 12 bbls. from sand at 788-97

feet. Lone Star Gas Co.'s No. 6 Lockridge was a failure at 1,771 feet.

Coleman County

Broan & Co.'s No. 1 Powell was dry and abandoned at 1,378 feet. So was Gracey Brothers' No. 1 Newsom at 2,080 feet. Shields and others' No. 1 Nance was a duster at 1,504 feet. Urban's No. 1 Thate was also a failure at 2,515 feet So was Browning's No. 1 Bowden at 1,258 feet. Jewell & Sills No. 1 Pfluger was also dry at 2,122 feet.

Cooke County

American Refining Co.'s No. 14 Dennis made 20 bbls. from sand at 1,244-78 feet. Camp & Heydrick and Oil Operators Trust Co.'s No. 3 Kleiss was swabbing 300 bbls. from sand at 1,633-56 feet. Fain-McGaha Oil Corp.'s No. 1 Chaffin found sands at 974-83 feet and 986-94 feet and made 38 bbls. Oil Operators Trust Co.'s No. 2 Kleiss was flowing 286 bbls. from sand at 1,584-96 feet. Shasta Oil Co.'s No. 1 Hair was a duster at 1,801 feet.

Eastland County

Price & Russell's No. 1 McGhohlin was a failure at 3,565 feet. So was Burk-Greis Oil Co.'s No. 1 Jeffreys at 3,542 feet. Cranfill & Reynolds' No. 1 Spencer made 550 bbls. at 2,976-3,003 feet.

Montague County

Cato Oil Co.'s No. 14 Rolls estate pumped 24 bbls. of oil and 10 bbls. of salt water at 807-19 feet. Flemming & Kimball's No. 1 Maddox was completed in sand at 868-85 feet; total depth 900 feet, making 21,730,500 feet with 320 pounds rock pressure. Gracey & Kahle's No. 5 Maddox was temporarily abandoned. Superior Oil Co.'s No. 1 Easley was dry at 2,006 feet. The Texas Company's No. 1 Gist-A found sands at 864-70 feet and 872-86 feet and made 56 bbls., total depth 891 feet.

Shackelford County

Magnolia Petroleum Co.'s No. 1 Dyer was a failure at 1,100 feet. So was Moore & Snebold's No. 1 Wilson at 2,001 feet. Roeser & Pendleton's No. 7-B Moberly-12 was also a duster at 1,256 feet. Simmons' No. 2 Harvey was plugged back from 1,711 feet and made 116 bbls. from sand at 1,643-58 feet.

Stephens County

Mid-Kansas Oil & Gas Co.'s No. 20 Hill pumped 10 bbls. after a 10-quart shot at 3,203-30 feet, total depth 3,231 feet. Humble Oil & Refining Co.'s No. 5 Glenn made 500,000 feet of gas and 2 bbls. of oil initial from sand at 3,277-92 feet after a 30-quart shot, total depth 3,336 feet. Lyman and others' No. 1 Bradshaw was a duster at 2,220 feet.

Throckmorton County

The location of Pandem Oil Corp.'s No. 1 McNutt was temporarily abandoned. Red Bank Oil Corp.'s No. 4 Parrott found lime at 3,909-31 feet and flowed 1,750 bbls. first 24 hours but dropped to 850 bbls. according to the latest gauge.

Wichita County

C. H. Clark and others' No. 3 Waggoner was a failure at 2,165 feet. So was R. R. Clark and others' No. 2 Honaker at 1,899 feet. Cooper & McLaughlin's No. 6 Love was also dry at 207 feet. Magnolia Petroleum Co.'s No. 73 Honaker was a duster at 2,156 feet. The Texas Company's No. 33 Marriott pumped 30 bbls. from oil sand at 1,930-42 feet, total depth 1,944 feet.

Wilbarger County

Atlantic Oil Producing Co.'s No. 1 Wilbarger County found oil sand at 1,542-88 feet and pumped 60 bbls.; No. 5 Sigler-Waggoner found lime at 2,692-2,712 feet and pumped 162 bbls. Fain-McGaha Oil Corp. and others' No. 8 Fluhman pumped 70 bbls. from sands at 1,453-70 feet and 1,478-94 feet; No. 1 Waggoner-F was plugged back from 1,989 feet to 1,826 feet and had sand at 1,810-26 feet and pumped 20 bbls., total depth 1,989 feet. Magnolia Petroleum Co.'s No. 11 Piper had no results at 2,135 feet. Phillips Petroleum Co.'s No. 1 Waggoner-O found lime at 2,276-78 feet and oil sands at 2,299-2,313 feet and 2,365-70 feet and pumped 58 bbls. first 12 hours, total depth 2,390 feet. Waggoner Refining Co.'s No. 7 Waggoner-A pumped 7 bbls. from sand at 2,400-20 feet.

Young County

Bridwell & Heydrick's No. 1 Groves was a failure at 1,050 feet. Moran and others' No. 4 Stewart made 109 bbls. from sand at 782-95 feet. Reed and others' No. 5 Jack-B found sand at 520-60 feet and made 30 bbls. No. 1 Jack-C flowed and pumped 95 bbls. first 11 hours at 511-40 feet. Nash & Windfohr's No. 1 Ware had oil sand at 2,133-64 feet and flowed 25 bbls. at 2,141-61 feet after a 20-quart shot, total depth 2,167 feet. E. C. Stovall's No. 1 fee (recompletion) had sandy lime at 3,886-94 feet and flowed 2,250 bbls. Sun Oil Co. and Texas Pacific Coal & Oil Co.'s No. 5 Donnell flowed 140 bbls. from sand at 3,342-51 feet.

WEST TEXAS COMPLETIONS

Howard County

Humble Oil & Refining Co.'s No. 3 Douthitt was abandoned with a hole full of salt water at 1,755 feet. Magnolia Petroleum Co. abandoned location for No. 3 Hyman Chalk and for No. 5 Chalk and also No. 5 Chalk-A.

Marland Oil Co.'s No. 7 Chalk-A averaged 63 bbls. daily on the swab from sand at 1,564-71 feet; No. 8 was shot with 20 quarts from 1,552-66 feet, total depth 1,570 feet, and swabbed 75 bbls.; No. 3 H. K. Clay was swabbing 65 bbls. as a result of a 15-quart shot at 1,795-1,803 feet; No. 3 Clay-A swabbed 45 bbls. after a 20-quart shot at 1,824-38 feet; No. 4 was shot with 20 quarts at 1,772-82 feet, total depth 1,792 feet, and swabbed 79 bbls.; No. 1 Clay-C had a hole full of water at 1,815-17 feet and was shut down; so was No. 1 Clay-D at 1,971 feet.

Reeves & Apperman's No. 2 H. K. Clay made 122 bbls. at 1,748-1,807 feet. Tidal Oil Co.'s No. 1 Otis Chalk swabbed 25 bbls. after a 20-quart shot at 1,574-85 feet.

Jones County

Gillette & Hickey & Cowboy Evans' No. 1 King was dry and plugged at 2,100 feet. Victor H. Martin's No. 1 Culbertson was also a failure at 3,240 feet.

Reagan County

Big Lake Oil Co.'s No. 72 University made 239 bbls. at 2,906-20 feet.

Terrell County

E. T. Williams' No. 1 Robertson was dry and abandoned at 3,154 feet.

Upton County

Snowden & McSweeney's No. 1 E. S. Hughes was completed for 297 bbls. at 2,326-32 feet. Texas Pacific Coal & Oil Co.'s No. 3 Lane-A was completed for 900 bbls. at 1,933-2,023 feet; No. 5 for 450 bbls. at 1,957-2,033 feet; and No. 7 pumped 240 bbls., 10 per cent sulphur water, at 1,976-2,014 feet after plugging back from 2,021 feet.

Fisher County

F. P. Zoch and others' No. 1 R. M. Clayton (or Lanius) in the center of west 160 acres of R. M. Clayton Preemption Survey, was abandoned as dry at 3,800 feet.

NORTH CENTRAL TEXAS

Estimated Production for Week Ending April 30, 1927

Ranger District—	This Week	Last Week
Brown County	20,890	21,150
Callahan County	4,470	4,560
Coleman County	1,350	1,370
Comanche County	1,580	1,585
Palo Pinto County	515	505
Ranger	10,060	10,410
Shackelford County	11,805	11,950
Stephens County	10,315	10,350
Total Ranger district	60,985	61,880
Wichita Falls District—		
Archer County	29,505	30,320
Baylor County	90	95
Clay County	690	670
Cooke County	2,180	2,760
Jack County	570	570
Montague County	12,950	13,020
Throckmorton County	1,680	1,650
Wichita County	31,470	31,500
Wilbarger County	13,335	13,515
Young County	11,305	13,110
Total Wichita Falls district	103,775	107,250
West Texas District—		
Big Lake Field	25,210	27,584
Crane County	45,230	42,791
Crockett County	1,630	1,584
Ector County	20	18
Garza County	5	4
Glasscock County	0	23
Howard County	2,920	2,727
Jones County	2,245	2,375
Loving County	20	23
Mitchell County	3,970	3,969
Pecos County	500	596
Scurry County	25	26
Upton County	19,330	18,708
Winkler County	1,440	1,252
Total W. Texas district	102,545	101,680
Grand total N. and W. Tex.	267,305	270,810
Decrease		3,505

STARTING SOMETHING

(Continued from Page 36)

When the war emergency demanded leadership the oil industry found plenty of it within its own ranks. It can do so today if it grapples with this overproduction problem openly and courageously. But a start must be made.

Mr. Reeser has pointed the way. Mr. Airey and Mr. Wilcox, and others whose letters will be published in future issues of The Oil and Gas Journal, recognize the necessity and offer their suggestions.

In this way it should be possible to learn what the industry may do and how it can be done. Once this is understood a great forward step will have been taken towards practical accomplishment in dealing with the industry's most pressing and most perilous problem—overproduction.

Late News from the Fields

OKLAHOMA

Three new wells swelled the output of Greater Seminole to a new peak production of 363,656 bbls. on Tuesday morning of this week. The field has now reached the stage where anything may be expected in the way of new production. The Bowlegs Pool has been extended in three directions within the past two days. The total number of wells in the field is now 391.

By pools the field produced as follows for the 24 hours ending Tuesday at 7 a. m.:

Bowlegs	95,816
Earlsboro	64,087
Seminole	170,021
Searight	33,732
Total	363,656

Prairie Oil & Gas Co.'s No. 1 Gahagan, NE cor. SE NE, Section 23-8-6, is flowing 150 bbls. hourly from the sand found at 4,215-19 feet. Pure Oil Co.'s No. 1 Reed, SE cor. NE SE, Section 14-8-6, was drilled deeper to a total depth of 4,293 feet, and responded with an increase of 2,500 bbls. making a total production of 6,030 bbls.

Gypsy Oil Co.'s No. 1 McFarland, SE cor. SW, Section 9-9-5, in the Earlsboro Pool, flowed 1,037 bbls. the first 24 hours from 1 foot in the sand touched at 4,290 feet. No. 2 McFarland, NE cor. SE SW, Section 9-9-5, is making 100 bbls. an hour from sand 4,290-4,302 feet.

Empire Gas & Fuel Co.'s No. 1 Edmondson, SE cor. SW, Section 3-9-5, has a showing of oil in the Earlsboro sand at 3,557 feet.

GULF COAST

HOUSTON, Tex., May 3.—The Gulf Production Co.'s No. 64 Phoenix in the Hull Pool, deepened to 3,400 feet, is flowing 2,000 bbls. The Texas Company's No. 7 Staiti, on the east side of the Trinity River at South Liberty, is making 125 bbls. on the jack at 3,250 feet. The Atlantic Oil Producing Co.'s No. 1 McLean at Spindletop was plugged back from 4,615 feet to 2,950 feet and is pumping. 35 bbls. Powers Production-Houston Gulf Gas Co.'s joint No. 3 in Markham Pool tested salt water at 3,940 feet, the Halliburton method being used the first time around a coastal dome.

Gulf Production Co.'s No. 10 Oakwood at Spindletop is flowing 5,000 bbls. at 3,750 feet. Yount Lee Co.'s No. 28 McFaddin is flowing 4,000 bbls.

The Illinois Pipe Line Co. is planning an 8-inch line from McCamey to Del Rio.

The Freeport Sulphur Co. has abandoned tests drilling for sulphur on the east side of the San Bernard River, near the Allen Dome in Brazoria County.

The Sun Co. abandoned No. 2 Farmer on the northeast flank of the Boling Dome at 2,726 feet in anhydrite. The Gulf Production Co. drilled through sulphur in No. 4 Chase on the south side at 650 feet and is now considerably deeper.

The Leonard Petroleum Co. of Washington, Pa., is rigging a wildcat test on the Love'l's Lake Road, 9 miles southwest of Beaumont, in Jefferson County.

In the Refugio gas field in Refugio County, W. F. Morgan-Houston Gulf Gas Co.'s No. 4 Shelly is making 40,000,000 feet of gas at 1,940 feet with 800 pounds of rock pressure. Same interests are drilling in No. 1 Lambert at 2,130 feet, showing for another good gasser. No. 2 Rose, located one-half mile west of these, is drilling at 1,265 feet. The Houston Gulf Gas Co.'s No. 3 Heard was junked with drill pipe in the hole. No. 3 Fox is taking a core at 2,240 feet and No. 3 Moody is drilling at 1,165 feet.

KANSAS

A wildcat well in McPherson County, Kansas, is attracting the attention of the fraternity. The well is T. C. Johnson and others' No. 1 Kuns, SE cor. NW, Section 12-19-3w, which is reported to have a puff of gas 2,965-70 feet.

TEXAS PANHANDLE

McIlroy Oil Co.'s No. 2 Cockrell, in Hutchinson County, which was earlier reported at 450 bbls. an hour, was flow-

(Continued on Page 164)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending April 30

ANDREWS COUNTY

Company, Farm and Location—	Remarks—
Calvin & Belt's No. 1 Ratliff & Bedford, C NE Sec. 16, Blk. A-54	Location.
J. S. Cosden's No. 1 Ratliff & Bedford, C SE Sec. 8, Blk. 73, Public School Land	Location.
Sartain Oil Co. et al's (was Deep Rock Oil Co.'s) No. 1 W. J. Harris, C SE Sec. 12, Blk. A-46, Public School Land	Rigging up.
C. B. McKennon's (was Neff et al's) No. 1 J. S. Means, C SE Sec. 12, Blk. A-35, Public School Land	Material on ground.
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 16, Blk. A-52, Public School Land Sur.	Top salt, 1,375 ft.; shut down, 1,530 ft.
Maer & Stanfforth's No. 1 W. B. Taylor, C SE Sec. 15, Blk. A-42, Public School Land Sur.	Top salt, 1,650 ft; fish. for tools, 3,010 ft, red rock and anhydrite.

BORDEN COUNTY

J. L. Kennedy's No. 1 J. S. York SE cor. Sec. 322, Blk. 97, H. & T. C. Sur.	Location.

(Continued on Page 109)

Panhandle's Record Initial Producer

McIlroy Oil Co.'s No. 3 Cockrell, in Hutchinson County, Produced 6,750 Bbls. on 15-Hour Gauge

By James H. Dameron
Staff Correspondent, Texas Panhandle Fields

FORT WORTH, Tex., May 2.—Overshadowing interest in the Panhandle's new pool in Gray County, the chief area of interest in the Panhandle, is McIlroy Oil Co.'s gusher in the McIlroy Pool of Hutchinson County, No. 2 Cockrell, Section 4, Block B-3, which came in flowing 450 bbls. hourly and not flowing wide open. How much the well is pinched in was not learned but its first 15-hour gauge showed it holding up by making 6,750 bbls. It is the biggest well yet brought in in the Panhandle Field.

Early reports from the field are to the effect the well will produce better than 450 bbls. hourly. The previous leader of Panhandle producers was Lucky Ten Oil Co.'s No. 1 in the NW SW NE, Section 11, Block Y, which produced 10,000 bbls. daily for two days and then went dead. At the present rate the McIlroy well is producing 10,800 bbls. daily. Lucky Ten company's well is 3½ miles almost due northwest.

The gravity of the oil is 40.4 at 70 and Marland Oil Co., connected to the well and is taking the oil. The elevation is 3,084 feet and the well is located 330 feet from the north line and 975 feet from the east line of the 80-acre tract. The producing formation is probably sandy lime.

No. 1 Cockrell is in the area opened some time ago by the Alaska company. It was opened wide a few weeks ago when Cockrell and McIlroy's No. 1 E. Cockrell, Section 1, Block B-3, came in at 2,851 feet making 2,500 bbls. daily. It is northwest of the gusher. The gusher's north offset, McMan Oil & Gas Co.'s No. 1 E. Cockrell, in Section 2, was a 1,200-bbl. well after a 270-quart shot at 2,958-3,028 feet. Last week Dixon Creek Oil Co.'s No. 1 E. Cockrell, a northeast offset, was completed at 3,012 feet flowing 15 bbls. per hour after a 380-quart shot.

Production Increases

Production in Panhandle took a 3,000-bbl. jump during the week and the McIlroy Pool threatens to send it soaring. In the eastern part of Gray County the Travis Pool is a potential pool of importance. All of the new wells in the McIlroy Pool are holding their production fairly good. The area is the most active in the Panhandle at present and McIlroy Oil Co.'s Nos. 3 and 9 Cockrell are shut down on top of the sand. Five new rigs are up in the area and three new locations were announced before the bringing in of No. 2 Cockrell.

May Be a Pool Opener

Travis and associates' No. 1 Back, Section 44, Block 25, H. & G. N. Survey, eastern Gray County, was the most interesting of the Panhandle wildcats during the past week. The freakish well loomed big for a few days as it opened the new pool and then fizzled, and at present is staging an encouraging comeback.

No. 1 Back blew in from 2,845 feet last Friday week making 100 bbls. per hour. It continued its performance for a few days without showing a too rapid decline. Then the well started cutting badly, making 40 bbls. per hour, 17 per cent salt water and 25 per cent b.s. The gravity of the oil dropped down as low as 22. Tools were run in and a couple of bridges knocked out and the well started improving.

It is still flowing and the water seems to be decreasing. Monday the well was flowing 10 bbls. per hour, 10 per cent salt water and 2 per cent b.s. The gravity of the oil rose to 36 degrees and there is 300 feet of cavings in the hole.

Panhandle operators who have closely followed the freakish antics of the well believe it will be eventually completed as a pool-opener making better than 1,000 bbls. The water is believed to be coming from behind the casing. Eight-inch was set at 2,010 feet leaving 800 feet of open hole. A string of 6⅝-inch pipe is being run and soon as that casing is set and the hole cleaned the well's true worth will be learned. It is by far the largest Panhandle well producing from below sea level. The elevation is 2,685 feet.

The pay formation is the source of no little interest. Before the bit penetrated the pay at 2,845 feet it went through 600 feet of recemented granite wash which appears to be granite under the glass. However, the formation did not drill like granite.

The Humble Pipe Line Co. laid 3 miles of 6-inch to the well from its North McLean pump station in Section 41, and is connected ready to run the oil. Six 500-bbl. tanks are filled and one flow tank. The remainder of the oil is in earthen pits some of which can be treated.

Lease and royalty trading around the well has been carried on at about the same "temperature" as that of the well. When the well was disappointing trading dragged and when the well showed better, trading increased. Most of the trading has been in royalties as practically all of the choice close-up acreage is held by major operating companies.

Production Figures

The actual gain in Panhandle production for the past week was 3,250 bbls. when its daily average was 123,175 bbls. Hutchinson County gained 1,440 bbls. and is now producing 100,480 bbls. daily. The production of Cockrell and McIlroy jumped from 970 to 3,030 bbls. daily. Dixon Creek was another company showing a good gain. Prairie Oil & Gas Co. and Phillips company's Hutchinson County production dropped 1,450 bbls. That was due primarily to the falling off of a recent completion, No. 7 Johnson "B", which came in for 2,640 bbls. initially and fell to 80 bbls. daily.

Carson County gained 1,800 bbls. over the previous week's report. Wheeler County gained 840 bbls. Gray County showed a decline of 570 bbls. However, Gray County's production does not include the production of the Travis No. 1 Back. The oil from that well is for the most part in pits and has to be treated. It is significant to note that Panhandle's production has been steadily increasing for the past month.

New production in the field was several thousand barrels shy of that brought in last week. Twenty new wells in the field aggregated 8,536 bbls., or an average of 427 bbls. per well. This new production came from the several different pools in the field.

Field Work Declining

Total field operations in the Panhandle continue to decline and at the end of the week totaled 445. They were divided as follows: First reports, 13; locations carried over, 33; rigs building, 11; rigs, 12; rigging, 12; drilling, 311; shut down, 53. There are 65 wildcats in the Panhandle area.

Of the wildcats in other areas of the Panhandle, Riley and Heck's No. 1 Hopkins, NW cor. Section 66, Block B-2, about 5 miles south of the Wilcox-Pampa Pool in Gray County, is attracting attention. The well has an elevation of 3,113 feet and topped granite wash at 3,010 feet and is spraying a little oil. It is being cleaned out and is 40 feet off bottom.

Another wildcat test creating interest is Purple Sage Oil Co.'s No. 1 Johnson, Section 8, Rockwall School land, near the center of the south line of Gray County. The well has an elevation of 2,939 feet and topped the lime at 2,105 feet. It is on the south side of the granite ridge and had the lime 834 feet above sea level. The well is now shut down at 2,300 feet for orders.

Humble Pipe Line Moving Oil

On April 27, Humble Pipe Line Co. started shipping oil through its 10-inch line from Panhandle to the coast. The first oil reached Comyn in Comanche County, central Texas, a distance of 398 mile, Saturday morning. The line starts from the Humble company's Burnett tank farm and pump station in northwestern Carson County. The movement was started with 550 bbls. and increased to 1,000 bbls. per hour. The capacity of the line will be 30,000 bbls. daily. At Comyn the line ties into the trunk line from McCamey and West Texas to the Humble company's Webster tank farm near Texas City on the Gulf Coast.

Three trunk lines are now shipping oil out of the Panhandle. The Gulf-Magnolia companies' line was started in operation a few days ago. The Prairie Pipe Line Co.'s line from Panhandle to Ringling, Okla., is not complete but oil is being moved through the section from Kingsmill to McLean and shipped from McLean in tank cars.

Because of the steady dipping of the county the Humble company found it necessary to erect only three stations on its line. One at Rockledge in Donley County, the second at Childress in Childress County and the third at Hawley in Jones County. The combined capacity of the three lines is estimated to be around 85,000 bbls. daily.

Eight New Locations

Eight new locations for the Panhandle area were announced Monday and are as follows:

Hutchinson County: Big Coach Oil Co.'s No. 1 F. P. Works, 330 feet from the north line and 1,320 feet from the east line NE cor. Section 5, Block Y-2, T. T. R. R. Survey. White and Lane's No. 1 E. Cockrell, 250 feet from the east and south line of the NW N half SW, Section 3, Block B-3, D. & S. E. Survey, rig on the ground. Dixon Creek Oil Co.'s No. 1 Smith-K, SE, Section 7, Block Y, rig. Skelly Oil Co.'s No. 5 Schafer, NE NW, Section 86, Block 4, and No. 6 Shafer, NE cor. Section 85, Block 4, locations.

In Childress County, a cellar is being dug for a 3,500-foot test, Hoover and Calloway's No. 1 O. L. Tucker, 1,650 feet north of SW cor. Section 786, Block H, W. & N. W. Survey, and 225 feet west of west line, Section 786, being in B. F. Reese Survey No. 7. In Wheeler County, location was made for Continental Oil Co.'s No. 3 J. H. Jackson, NE cor. N half SE, Section 11, Block 27, H. & G. N. Survey. A rig is on the ground for The Texas Company's No. 1 B. P. Sewell, 677 feet north and 330 feet east of SW cor. NW, Section 1, Block 24, H. & G. N. Survey.

Carson County

McMan Oil & Gas Co.'s No. 2 E. F. Percival, NW cor. W half NE Section 199, Block 3, topped the pay in lime at 3,170 feet and penetrated it 10 feet to make a 600-bbl. well on the swab. In the north end of the McConnell Pool, Prairie Oil & Gas Co.'s No. 4-A J. W. McConnell, Section 67, Block 4, topped the pay in lime and granite wash at 3,135 feet and was drilled to 3,145 feet. The well started off making 110 bbls. per hour and is in the SE cor. of the section. Marston Oil Co.'s No. 5 E. F. Bryan, Section 92, Block 5, has been temporarily abandoned at 2,530 feet.

Three completions were recorded in the Roxana Pool in the northeast part of Carson County. White Deer Oil Co.'s No. 2 Jordan Brown, Section 104, Block 4, extended the pool's production to the east with a 75-bbl. well making 10 per cent water from lime and granite wash at 3,118-35 feet. Champlin Refining Co.'s No. 6 E. F. Bryan, Section 92, Block 4, had the pay in lime and granite wash at 3,170 to 3,244 feet. The pay formation was shot with 140 quarts and the well was completed flowing and swabbing 200 bbls. daily. McMann Oil & Gas Co.'s No. 6 E. F. Bryan, Section 107, Block 4, is flowing and swabbing 175 bbls. daily after a 140-quart shot in lime and granite wash at 3,140-95 feet; total depth 3,250 feet.

Gray County

Pure Oil Co.'s two producers in the Wilcox-Pampa Pool were the only completions in the county during the week. Pure Oil Co.'s No. 2 Davis, Section 86, Block 3, is making 10,000,000 feet of gas and producing 110 bbls. of oil from granite wash at 3,056-90 feet. The well's first gas was encountered at 2,824 and increased to its maximum at 3,152 feet, total depth. Pure Oil Co.'s No. 3 on the same lease is flowing 60 bbls. daily from granite wash at 3,180-3,218 feet. The first show of oil was found at 3,102 feet and 10,000,000 feet of gas was found at 2,825-60 feet.

Hutchinson County

Hutchinson County spent its force in big wells during the previous week, and of the nine completions recorded during the current week, none was of a sensational nature. North of the river a brace of wells were completed. Goldelline Oil Co.'s No. 3-A J. A. Whittenburg, Section 23, Block M-23, topped the pay in lime at 2,898 feet and was drilled to 2,943 feet. The well was shot with 80 quarts at 2,902-43 feet and was com-

(Continued on Page 164)

WILDCAT OPERATIONS IN PANHANDLE

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block—	Remarks—
United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H. & G. N. Sur.	Spudded and temporarily abandoned.

BRISCOE COUNTY

C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW Sec. 22, Blk. B-3, B. S. & F. Sur.	Fishing 1,600 ft.

CARSON COUNTY

Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Temporarily abandoned 1,980 ft.
Champlin Ref. Co.'s No. 2 E. F. Bryan, Sec. 92, Blk. 4	Cleaning out 3,150 ft.; flowing 150 bbls. daily from lime and granite wash at 3,196 to 3,240 ft.; cleaning out.
Empire G. & F. Co.'s No. 1 Burnett-B	Drilling 1,696 ft.
Empire G. & F. Co.'s No. 1 Burnett-C	Drilling 2,390 ft.

(Continued on Page 88)

DUNN TOOLAGRAM

What Price UPKEEP ?

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DUNN-SMITHTONG
PATENTED 1925
100-85 = 15
15 Dunn dies outwear 100 dies of other makes.
1 month's upkeep of ordinary tongs will operate Dunn tongs 19 months.
Say "Economy"

Actual records in field service show that the upkeep expense on Dunn Super-Safety Rotary Tongs is approximately 85% less than that of other makes.

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OIL WELL DUNN TOOLS

DUNN SAFETY *means* DONE SAFELY

New Seminole and Oklahoma Records

State's Production Reaches 732,000 Bbls. and Seminole's New Peak is 352,411. Bowlegs' Output 75,000

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

The oil fields of Oklahoma established a new record last week when they made an average daily output of 732,000 bbls. This figure is 250,000 bbls. more than the State was producing this time one year ago. The Seminole Field touched a new peak during the week when a daily output of 352,411 bbls. was realized. The increase was due chiefly to the Bowlegs or South Seminole Pool which now is producing 75,000 bbls. The Seminole City or 9-6 area continues to decline and registered 176,000 bbls. for the week ending Friday, April 29.

The Greater Seminole Field alone is now producing more oil than the entire State produced not so long ago, and recent developments in the Bowlegs area indicate continued peaks for that territory. Four wells drilled in during the week-end extended the pool in three directions. The most important well is the Gypsy Oil Co.'s No. 1 Brown, SW cor. SE, Section 8-6, which is 3 miles from any production. The well touched the Wilcox sand 4,457-58 feet, and had an initial flow of 50 bbls. hourly. It is now making 35 bbls. an hour. The well was supposed to be very low structurally, but its production will be the signal for another batch of wells to be started. The Gypsy company has a good block of acreage around the well.

Increased Shipments

The improved weather conditions seem to have influenced the crude market to some extent, and the majority of pipe line companies report increased shipments for the week. Approximately 170,000 bbls. of crude daily are being put into storage in the Kansas-Oklahoma fields.

The Earlsboro section of Seminole came in for attention last week when the Independent Oil & Gas Co. and Darby Petroleum Co. drilled in No. 2 Knappenberger, SE cor. NE, Section 8-9-5, and the well started flowing 150 bbls. an hour. This is a direct west offset to the Crosbie and others well in Section 9-9-5, which revived the interest in this part of Earlsboro. The Crosbie well is still producing nicely, and the diagonal offset owned by the Philmack Oil Co. and the Marland Oil Co. is making water. This well was rather low on the structure, but has a good production. It is making 150 bbls. of water daily.

The Barnsdall Oil Co.'s No. 1 Smith, NE cor. NW, Section 15-9-6, extended the deep sand at Earlsboro a half mile to the east and is flowing 4,900 bbls. daily. Along the line between the discovery well and the Barnsdall well, the Gypsy Oil Co.'s No. 2 Peters, SE cor. SW SW, Section 10-9-5, is making 6,000 bbls. daily from sand 4,370-72 feet.

Extends Bowlegs Pool

Half a mile north of the discovery well at Bowlegs, the Prairie Oil & Gas Co. has a well flowing 160 bbls. hourly. It is No. 1 Davey, SE cor. SW, Section 10-8-6, which had sand at 3,980-91 feet. This well is a quarter mile west of the Mid-Continent Petroleum Corp.'s No. 2 Taylor in the same section which was completed last week and which established a new north line for Bowlegs district. These two wells change the perspective of Bowlegs again and make 14 locations seem very good prospects for large wells. There are 20 wells due to be completed in Bowlegs within 15 days, and their completion should cause the output of that field to touch 100,000 bbls.

Aside from Seminole, the remainder of the State displays little of unusual interest. In the North Braman district, the Marland Oil Co.'s No. 3 North, NW cor. SW SW, Section 6-26-1w, increased its production from 411 to 665 bbls. without being drilled deeper or agitated in any way.

Near Weleetka in Okfuskee County, the Gibson-Zanhiser interests may have a new Gilcrease sand pool opened by No. 1 Tiger, SW cor. NE, Section 4-10-9, which had sand at 3,030-40 feet and has 400 feet of oil in the hole.

The production of some of the smaller pools in the state giving the daily average figure for the week ending April 28 follows:

Pool—	Wells	Daily Prod. Bbls.
Thomas	19	1,595
Otoe	32	2,164
Hubbard	66	8,042
N. Braman	86	6,303
S. Braman	34	3,611
Davenport	210	3,436
Stroud	65	1,527
Skellyville	29	649
Deep Rock	41	1,709
Ingalls	10	111

In the Bowlegs district the Pure Oil Co.'s No. 1 Harjo, SE cor. NE SE Section 14-8-6, is making 165 bbls. an hour from sand at 4,278-90 feet. The Gypsy Oil Co.'s No. 1 McFarland, SE cor. SW Section 9-9-5, is making 2,000 bbls. daily from sand at 4,290-91 feet. This well extended the Earlsboro Pool a quarter mile to the south.

The daily average production of the Seminole Field by companies and leases for the week ending April 29 follows:

Bowlegs 8-6 Pool

Company and Lease—	Wells	Prod.
Amerada:		
Rasco	7	10,485
Atlantic O. P. Co.:		
Jones	2	165
Carter:		
Bowlegs	1	2,815
Walker	1	3,330
Wise	2	9,410
Empire Gas & Fuel Co.:		
Lacey	1	4,061
Gypsy Oil Co.:		
Walker	3	7,520
Indian Terr. Illum. Oil Co.:		
Davis	2	6,359
Goforth	3	6,585
Livingston	3	3,787
Walker	2	369
Youngblood	2	5,598
Mid-Cont. Pet. Corp.:		
Baker	1	4,408
Roxana Pet. Corp.:		
Taylor	1	104
Sinclair Oil & Gas Co.:		
Adams	1	165
Bowlegs	1	Off
Harjo	2	9,670
Total	35	74,819

Earlsboro 9-5 Pool

Amerada:		
Anderson	3	9,099
Cowden	1	6,055
Barnsdall:		
Smith	1	4,901
Crosbie et al:		
Bryant	1	6,215
Gypsy:		
Bora	1	Off
Earl	1	Off
*State land	3	12,122

*Half Amerada.

NEW CAPITAL FOR WILDCATTING IN NORTHWESTERN NEW MEXICO

By Special Correspondent

FARMINGTON, N. Mex., Apr. 30.—Four new wells spudded, a rotary being installed on Rattlesnake structure to complete the deep test to the Shinarump and Pennsylvania formations, and a large amount of new capital in sight for wildcat development east of the reservation, are the principal features of the week's developments in the San Juan Basin oil field.

Miller & Vandruff spudded in the first of the week on the Hart Mountain Dome which is located approximately 8 miles north of the Union Oil & Mining Co. well in the Blanco district. This is wildcat territory and the log will be watched with interest by all operators in the field.

The Larsen Oil Co. spudded in this week on the NW cor. Section 11-28-11, Kutz Canon district, about 2 miles southeast of the Senate Oil Co. well.

E. N. Wiley spudded in a well the first of the week on the William Sheets tract in the Bloomfield district for R. M. Smith the object being the production in the shallow sands.

The T. C. N. Oil Co., this week spudded in on the Ed Lanier permit in the Bloomfield district in the NW SW, Section 9-29-11, the objective being the production of the shallow sands.

The location for the Hall well in the Coal Creek district has been made and the rig taken in, but no one has returned from camp to give the exact location. It is probable that it will be spudded in by the first of next week.

The Mid-Continent Oil Co., operating in the Bloomfield district, Section 22-29-11, on the W. I. Hare tract is cleaning out the well after having put in four light shots in as many different sands in order to make a test of the well's producing capacity, but the work is not yet completed.

The Senate Oil Co., operating in the Kutz Canon district, on the Garland permit, Section 34-29-11, has completed running its 4¾-inch casing and is trying to go a little deeper but is still troubled by the excessive gas flow. An attempt to mud off the gas flow resulted in the mud being blown out at the last report we had.

The Southwest Development Co., operating on the Atteberry tract, Section 24-31-11, is having its annual stockholders meeting in Denver, Colo., this week and the hole was mudded up above the sands that gave gas and oil showings last week. It is expected that the stockholders will authorize the putting in of a standard rig and going on down to the lower sands.

The Portage Oil & Gas Syndicate, operating on the Glade structure, Section 24-30-12, has closed down pending a decision of the members of the syndicate as to whether they will carry the hole to the Mesa Verde sands. Most of the shareholders are residents of Ohio, and it is likely that Field Manager C. J. Hubbell will go there for conference before drilling is resumed. The hole is bottomed at nearly 2,000 feet.

The San Juan Petroleum Corporation, operating on the J. M. Palmer tract, a half mile west of the Farmington section, 17-29-13, has nearly completed a water shutoff, and the gas, as a result, has greatly increased in volume. They have also gone a little farther into the sand. The well will probably be preserved as a gas supply for the town. The Union Oil & Mining Co., operating in the Blanco district, Section 8-29-9, has reached the first string of lost tools.

The Miley Oil Co., operating on the Red Mesa structure, Section 32-33-12, is putting in a new set of flues in their boiler and will resume drilling to side-

(Continued on Page 143)

Independent-Darby:		
Knappenberger	1	2,919
Magnolia:		
Holmsley	1	6,384
Mid-Cont. Pet. Corp.:		
McCumber	1	1,120
Phillips Pet. Co.:		
Graham	1	1,103
Philmack-Marland:		
Dobbs	1	3,707
Prairie:		
Baker	1	250
Gypsy:		
McFarland	1	1,009
Sinclair et al:		
Foreman	1	Off
Shallow production	31	4,950
Total	50	58,977

Seminole 9-6 Pool

Amerada:		
Fixico	4	3,216
Killingsworth	4	1,355
Rentie	4	2,356
Atlantic O. P.:		
N. Cudjo	4	2,013
J. Cudjo	2	155
Barnsdall:		
Carter	9	5,214
Jones	2	4,894
Carter Oil Co.:		
B. Carter	2	180
J. Carter	4	145
F. Carter	4	1,045
R. Cudjo	3	5,065
W. Cudjo	1	1,260
Gilliland	1	1,450
Grisso	7	4,615
Knappenberger	3	2,310
M. Killingsworth	8	20,135
G. Killingsworth	3	3,230
Lukes	3	3,890
Simpson	1	Off
Strothers	2	7,265
Vierson	4	3,425
Empire Gas & Fuel:		
Wilson	3	3,881
Gypsy Oil Co.:		
Butler	3	1,825
Carter	8	3,021
Fixico	5	180
Harjo	2	1,315
Wolf	5	3,614
Independent Oil & Gas:		
P. Fixico	3	846
Independent-Garland:		
T. Fixico	8	1,602
Independent-Interocean:		
Jones	4	826
Indian Terr. Illum. Oil Co.:		
Bowlegs	9	4,368
Goodin	4	845
Harjo	4	1,060
James	6	1,283
Reed	3	32
Kingwood-Roxana:		
Johnson	5	4,858
Magnolia:		
Franks	2	1,904
Mid-Cont. Pet. Corp.:		
Rentie	8	2,645
Tayeche	7	1,430
Mid-Kansas Oil & Gas:		
Pressley	1	524
Johnson	1	890
Philmack-McCulloch:		
Butler	1	1,975
Phillips Pet.:		
Strothers	1	Off
Prairie Oil & Gas:		
Gross	5	280
Spencer	1	25
Strothers	5	5,200
Pure Oil Co.:		
Strothers	17	12,386
Strothers B	1	413
Roxana Pet. Corp.:		
Harber	2	1,678
Lashley	2	585
Sinclair Oil & Gas:		
Carter	2	50
Cudjo A	6	1,785
Cudjo B	3	1,685
Fixico*	4	3,450

*Half Transcontinental.

T. B. Slick:		
Born	1	Off
Cudjo	2	2,716
Franks	7	3,370
Giblet	2	1,373
Superior Oil Co.:		
Cudjo	4	5,452
The Texas Company:		
Mayhue	1	Off
Tidal-Osage Oil Co.:		
Carter	5	3,285
Fixico	7	4,235
Harjo	6	495
Mahardy	4	825
Tayeche	2	3,950
Turman Oil Co.:		
Cudjo	4	2,856
Grisso	3	1,182
Total	264	176,526

Searight 10-6

Carter Oil Co.:		
Davis	5	10,525
Frazier	3	3,830
Kikel	1	10
Scott	1	55
Stewart	1	95
Gypsy:		
Cudjo	1	1,085
Mid-Cont. Pet. Corp.:		
Grayson	4	7,870
Prairie Oil & Gas:		
Cameron	1	Off

The oil industry is being threatened by two converging streams

One stream is the over-production of crude The other is the increased production of gasoline obtained from the crude by means of the cracking process These two streams are threatening the industry with drowning in a sea of golden wealth

The Cracking stream cannot and should not be "damned" It is economically sound, economically profitable, and the greatest possible factor in conservation

The other stream (Over-production of Crude) is receiving the serious consideration of both producers and the State and Federal Government

It should be and can best be handled by the industry But if the industry won't—?

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Carter	1	35
Houck	1	15
Kinkade	1	7,555
Pure Oil Co.:		
Aldridge	1	945
Searight et al:		
Youngblood	2	Off
Sinclair Oil & Gas Co.:		
Polly	1	1,425
Twin State Oil Co.:		
Jennings	1	1,575
H. F. Wilcox Oil & Gas Co.:		
Chupco	2	520
Total	33	35,540
Grand total	382	345,862

Carter County

Magnolia Petroleum Co. is building the rig for No. 1 Ratliff, NE cor. SW NW Section 21-1-s-3w. The rig is up for No. 1 Denny, SE cor. NE NE Section 30-1s-3w. Humble Oil & Refining Co. has the rig up for No. 6 Calvery, NE cor. SW SW Section 2-2s-3w. Roxana Petroleum Corp. has put up the rig for No. 2 Lyles, NW cor. SW NW Section 11-2s-3w. Humble Oil & Refining Co. is building the rig for No. 6 Lester, SE cor. NW NW Section 35-2s-3w.

Humble Oil & Refining Co.'s No. 3 Dixon, NW cor. SW SW Section 18-1s-3w, swabbed 100 bbls. from sand 2,846-2,981 feet and when put on the pump made 75 bbls. Max Westheimer's No. 3 Dixon, SE cor. SW NW Section 18-1s-3w, had broken sand 2,697-2,740 feet with a small show and was abandoned at 3,150 feet. No. 4 Dixon, SW cor. NW Section 18-1s-3w, a location, has been abandoned. Magnolia Petroleum Co.'s No. 4 W. Hardin, NW cor. SW Section 19-1s-3w, was completed for 17,000,000 feet of gas from broken sand 2,150-2,330 feet. No. 2 Spears, NW cor. SW NW Section 29-1s-3w, is pumping 70 bbls. from sand 2,963-73 feet. No. 9 Fish, SE cor. SW SE SW Section 34-1s-3w, swabbed 100 bbls. and was put on the pump and making 75 bbls. from broken sand 2,338-3,170 feet. Humble Oil & Refining Co.'s No. 5 Calvery, NE cor. SW SW Section 2-2s-3w, is producing 720 bbls. from sand 2,871-2,913 feet. Magnolia Petroleum Co.'s No. 1 Grimes, NE cor. NW NE Section 10-2s-3w, is producing from a series of sands from 2,630-3,050 feet and making 15,000,000 feet of gas and 76 bbls. of oil. Wirt Franklin's No. 1 Carpenter, NE cor. SW Section 11-2s-3w, has been abandoned at 3,543 feet. Roxana Petroleum Corp.'s No. 1 Lyles, NE cor. SW NW Section 11-2s-3w, is making 185 bbls. from a series of sands 2,796-3,217 feet. Wirt Franklin's No. 7 Love & Thurmon, NW cor. NE SE Section 27-2s-3w, is pumping 30 bbls. from a series of sands 2,119-2,254 feet. Coline Oil Co.'s No. 4 Higgins, NW cor. NE Section 7-2s-2w, had broken sand 2,283-2,435 feet and is producing 30 bb'ls. Magnolia Petroleum Co.'s No. 6 Wilson, NW cor. NE NE Section 21-2s-2w, is pumping 22 bbls. from broken sand 1,409-40 feet. Simpson-Fell Oil Co.'s No. 3 Lowery, SW cor. SE NW Section 9-4s-2w, was completed for 46 bbls. on the pump, producing from broken sands 1,787-2,367 feet.

Creek County

Steinberger & Smith's No. 1 Canard, SW cor. Section 20-19-8, an old well, is being rigged up to deepen. Olean Petroleum Co. has the rig on the ground for No. 1 Bigpond, NE cor. NW SE NE Section 36-15-7. Farqura and others have the rig up for No. 1 Townlot, No. 8, Block 25, Section 6-18-12, in the Oakhurst Townsite Pool. O. M. Irelan has built the rig for No. 1-A Farley, SE cor. SW NE SE Section 13-17-10. Eliza Tim Oil Co.'s No. 2 Inman, SW cor. Section 9-17-11, is spudding. Thompson & Black have a machine at the location for No. 2 Wilson, NW cor. SW, Section 16-17-11. C. O. Buckles' No. 3 Warnarkee, SE cor. NW, Section 22-17-11, is spudding. Carpenter and others have built the rig for No. 4 Jackson, CWL NE SW, Section 22-17-11.

The Prairie Oil & Gas Co.'s No. 1 Flint, NE cor. NW NW Section 10-17-9, topped the Prue sand at 1,971 feet, was drilled to 1,992 feet and plugged back to 1,988 feet where it was shot with 30 quarts and produced 20 bbls. Steinberger & Smith's No. 3 Miles, NE cor. SE SE Section 19-19-8, has been completed for 5,000,000 feet of gas from sand 2,323-54 feet. J. O. Walters and others' No. 1 Holeman, SE cor. NE SE Section 30-18-8, is dry and abandoned at 3,695 feet. Cole and others' No. 1 Strip, SW cor. NW NE Section 22-18-11, had a hole full of water in the Turkey Mountain sand 2,633-78 feet and was abandoned. Calvin & Swindler's No. 1, Lot 33, Block 25, Section 6-18-12, in the Oakhurst Townsite Pool, a rig, has been abandoned. Denver Fuel Co.'s No. 1, Lots 3 and 4, Block 17, Section 6-18-12, drilled the Turkey Mountain sand 2,173-2,227 feet and is making 50 bbls. oil. W. S. Dickey's No. 1, Lot 30, Block 9, Section 6-18-12, had a hole full of water in the Turkey Mountain sand and plugged back to the Hominy sand 2,166-82 feet where it is producing 10 bbls. A. B. Ice's No. 1, Lots 8 and 9, Block 24, Section 6-18-12, is a Turkey Mountain sand well making 25 bbls. from 2,216-29 feet. Henry Oil Co.'s No. 1 Unalloted, C NW SE Section 1-17-10, is dry and abandoned at 3,018 feet in the Wilcox sand. W. H. Elson and others' No. 2 Turner NW cor. NE SE NW Section 12-17-10, is a Dutcher sand well producing 25 bbls. from 2,435-51 feet. Thompson & Black's No. 1 E. Broadnox, NE cor. SW NW Section 16-17-11, was dry in the Wilcox sand 2,643-80 feet and was plugged back to the Glenn sand 1,841-1,969 feet and completed for 2,000,000 feet of gas. C. Stoker and others' No. 3 Unallotted, NE cor. NW SW Section 16-16-9, is making 40 bbls. from the Dutcher sand 3,030-41 feet after it was shot with 40 quarts. Independent Oil & Gas Co.'s No. 1 Wolf, SE cor. SW NE Section 18-14-10, is making 50 bbls. from the Dutcher sand 2,813-22 feet. Slick & Fuhrman's No. 2 Harjo, NW cor. SE SW Section 32-14-10, is good for 40 bbls. from the Wilcox 3-402-21 feet. Reams and others' No. 1 Harjo, NW cor. SE Section 25-13-10, has been abandoned in the Wilcox sand at 3,447-67 feet.

Garvin County

Magnolia Petroleum Co.'s No. 27 Cowan, SW cor. NE Section 15-1-3w, has been completed for 2,500,000 feet of gas from sand at 1,456-60 feet.

Garfield County

Failing & Lawson's No. 1 Disney, NW cor. Section 24-24-3w, which had a rotary derrick up, has been abandoned with no hole made. Sinclair Oil & Gas Co.'s No. 39 Kisner (West), NE cor. SW NW Section 19-22-3w, Garber Pool, is dry and abandoned at 3,325 feet.

Kingfisher County

Reiter-Foster Oil Co.'s location for No. 1 Davidson, SW cor. Section 23-15-5w, has been abandoned.

Kay County

Comar Oil Co.'s No. 12-W Buell, NW cor. SE SE Section 21-29-1w, produced 50 bbls. the first 24 hours from the Wilcox sand at 3,383-3,417 feet. No. 1-W Priboth, SE cor. NW Section 21-29-1w, in the North Braman Pool, was completed for 460 bbls. in the Wilcox sand at 3,310-54½ feet. No. 10-W Priboth, NW cor. SE NW Section 21-29-1w, flowed 336 bbls. the first day from the Wilcox sand at 3,333-86 feet. Harold Petroleum Co.'s No. 2 Moore, SE cor. NW Section 4-27-1w, in the Blackwell district, had sand at 3,462-69 feet wher water was encountered and the hole was plugged back to 3,450 feet and completed for 2,000,000 feet of gas. Vic Oil Co.'s No. 2 Savage, SW cor. SE NE Section 5-27-1w, has been abandoned at 3,477 feet. Marland Oil Co.'s No. 1 Miller, CEL SW, Section 9-25-2w, Thomas Pool, is making 6,500,000 feet of gas from sand at 1,131-39 feet. The Prairie Oil & Gas Co.'s No. 2 Leona Smith "B," NE cor. NW SE Section 1-26-2w, Hubbard Pool, was completed for 1,022 bb'ls. in the Wilcox sand at 3,578-3,600 feet.

Lincoln County

Madden & Madden made location for No. 1 Pickerel, SW cor. SE Section 20-15-6.

Muskogee County

H. E. Williams has a machine on the ground for No. 1 Sango, SE cor. NE NW Section 17-15-17. Apex Petroleum Co. has the rig up for No. 1 Smith, SE cor. NE SE Section 27-14-15. Denton & Marshall's No. 1 Roberts, CWL NE NW, Section 16-15-17, has been abandoned at 1,469 feet.

Okmulgee County

McInturff and others are rigging up a machine for No. 1 Edwards, CSL NE NE NE Section 4-12-14.

G. F. Haun's No. 1 Johnson, NE cor. SE NE Section 20-12-13, is a dry hole at 2,420 feet. Barbara Oil Co.'s No. 9 Fat, NE cor. NW SE Section 34-13-14, has been abandoned at 2,706 feet. A. D. McDonald's No. 1 Tiger, SE cor. Section 24-16-13, was shot with 10 quarts in the Glenn sand at 1,662-66 feet and is making 10 bb'ls. Sheridan Oil Co.'s No. 1 Willis, SW cor. SE NW Section 33-15-12, is a dry hole at 2,702 feet in

(Continued on Page 143)

RENO COUNTY WILDCAT MAY RESULT IN WESTERN KANSAS WILCOX POOL

By J. L. Dwyer
Staff Correspondent, Kansas Fields

The Reno County territory was the scene of greatest interest last week when a wildcat well drilled by the Marland Oil Co. showed good prospects and may result in a new Wilcox sand pool for western Kansas.

The well is No. 1 Griffith, SE cor NW Section 4-26-4w, which had a formation thought to be the top of the Wilcox series from 4,120-25 feet, and the hole filled up 3,500 feet with a light green oil similar to the fluid usually found in the Wilcox. It is reported that the last foot of drilling brought fine grains of sand to the surface. The well is shut down pending the construction of tanks, and should be drilled in the latter part of this week.

It has caused a great deal of interest to be displayed around it, although the Marland Oil Co.'s acreage holdings cover a radius of 2 miles in every direction except for two leases owned by the Carter Oil Co. and the Sinclair Oil & Gas Co., respectively.

The well should have a widefelt importance upon the western Kansas territory, although it is not producing yet. The presence of the Wilcox sand is gradually being established over this region, and in almost every test some sort of oil showing is found. This is exactly the manner of development which precedes intensive activity.

In Reno County some months ago, Hartman & Skaer and the Skelly Oil Co. found production, and the Marland well adds another notch for Reno regions. Situated north of Kingman County, which experienced a boom one year ago when Port Fleeger and the Carter Oil Co. found the Wilcox sand, Reno County is certain to profit by a leasing campaign. The Marland Oil Co.'s ample lease holdings in this area will eliminate any possibility of an immediate drilling campaign even if the well should be a good one.

In Rice County, the Independent Oil & Gas Co. has another good well in No. 2 Miller, NW cor. NE NE Section 3-21-6w, which is flowing 50 bbls. an hour from sand 3,376-86 feet.

In the Leon district of Butler County, the Mid-Kansas Oil & Gas Co.'s No. 1 Gibson, NW cor. SW SE Section 3-28-6, has 600 feet of oil in the hole from the lime found, 2,936-42 feet. It is estimated at 70 bb'ls. daily.

In Elk County, a new Burgess sand pool may be opened by the well of Wilson & Benge in Section 18-31-10. The well, No. 1 McSpadden, SE cor NW SE of the section, has 500 feet of oil in the hole found from 2,208-30 feet.

Butler County

Connell Oil Co. and others made location No. 1 Hoffman, NW cor. NE, Section 9-28-5. Johnson and others have the rig on the ground for No. 1 Rogey, NW cor. NE NW, Section 10-28-6.

Empire Gas & Fuel Co.'s No. 82 Enyart, SE cor. NW NW Section 12-26-4, made a 75-bbl. well after it was shot with 40 quarts in sand 1,645-73 feet. James and others' No. 4 Harmon "A," SW cor. NW SE SE Section 24-26-4, was shot with 20 quarts and is a 10-bbl. well. Johnson and others' No. 1 Beedles, SE cor. SW Section 4-27-6, is producing 50 bbls. from sand at 3,149-58 feet.

Cowley County

Empire Gas & Fuel Co.'s No. 2 Eastman "C," SE cor. NE NW Section 6-31-6, had sand at 2,855-71 feet, was shot with 50 quarts and made 25 bbls. The Texas Company's No. 14 Eastman, SW cor. NW NE Section 6-31-6, topped the

(Continued on Page 143)

BIG COMPANIES BLOCKING FOR THE FUTURE IN EAST TEXAS COUNTIES

By Special Correspondent

CORSICANA, Tex. Apr. 30.—Acreage buying on a large scale in several east central Texas counties has followed the recent discovery of oil in Cherokee County.

In addition to the recent lease purchases already recorded in The Oil and Gas Journal, the Humble Oil & Refining Co. has blocked 11,420 acres in Smith County in the Smith-Drury Survey, while the Sun Oil Co. and the Roxana Petroleum Corp. have made large acreage purchases elsewhere.

About 7,500 acres of the Humble's block was bought at $1 per acre but the balance of it is said to have cost the company from $10 to $40 per acre. The Texas Company and the Pure Oil Co. were able to get three pieces out of the block. The Humble company's geologists believe the block is over a submerged dome.

The Sun Oil Co. blocked out 3,000 acres of the Gresham and Noonday Survey in Smith County. The Roxana Petroleum Corp. has blocked 7,600 acres near Colfax in the southeast corner of Van Zandt County. This was purchased on the surface geology presented.

The Humble Oil & Refining Co. is around 1,700 feet deep in its No. 2 Earl & Ragsdale, near its shut-in oil well. The Magnolia Petroleum Co.'s test near Rusk, Cherokee County and about 21 miles southeast of the Humble's salt dome well on the Earl & Ragsdale property, was being reamed to set the 5 3/16-inch casing. This well is believed to be at a total depth of 4,336 feet. There is a showing of oil at 4,328-34 feet which will be tested when pipe is set. A graveled highway is being laid between the town of Rusk and the Magnolia's well.

In Anderson County the Humble Oil & Refining Co. will soon start drilling its No. 1 Spencer Clemmons, H. C. Sassman Survey. The same company's No. 2-A Southern Lumber Co. was drilling below 3,475 feet. in chalk which was topped at 3,322 feet.

In Henderson County Cranfill & Reynolds are rigged up to start No. 1 Mrs. B. E. Purefay, William K. Newell sursey.

In Limestone County the important test of the Kosse Syndicate, 200 feet from the once famous Jones well of the Humphreys Oil Co. which produced about 45,000 bbls. within a few days a few years ago then quit forever, has been abandoned and the derrick has been skidded 70 feet to a new location. The Kosse Syndicate's hole was at a total depth of about 3,400 feet. The Pandem Oil Co.'s No. 1 Bassett, Walker survey which had a show of oil at 4,500 feet, will be given a test.

SERIES 150

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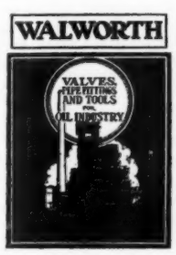

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Floods Overwhelm Monroe Gas Fields

North Louisiana and Arkansas District Operations Slackened by High Water. Production Falls Sharply

By Neil Williams
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., May 2. — A threatened almost complete cessation of operations in the world's largest gas field, the Monroe district of northeastern Louisiana, is looming as one of the latest developments in water-soaked Arkansas and north Louisiana oil fields.

Flood waters sweeping down from southeastern Arkansas gradually are engulfing practically the entire field as well as submerging Monroe, the capital of the three parishes comprising the Monroe gas district. It is almost impossible to estimate the damage in the field but the loss to operators there will mount into the thousands of dollars, according to William F. Chisholm, director of the mineral division of the Louisiana department of conservation at Shreveport.

No other field in the Arkansas and north Louisiana division even comparatively has as much capital tied up in equipment as the Monroe district and nearly all of this will be ruined for the operators there. In that district virtually every well has an individual meter and these alone will mean a large item of loss.

However, all other fields in this division have been feeling the effects of high water and floods in a general forced slackening of operations and sharp falling off in production. This was perhaps more noticeable the past week when there was not a single important field development out of the routine.

Floods Cause Decline

Due to the high water, for the third consecutive week production in this division declined abruptly. Daily average production the past week was 151,120 bbls., a drop of 7,230 bbls. from the previous week and a decrease of 23,540 bbls. in the last three weeks. Slight increases in production were reflected in Caddo and Elm Grove fields of north Louisiana and in Nevada County and the Stephens Field of Arkansas, districts least affected by high water, but Smackover, which has been under water suffered another drop in output. The production by fields was:

NORTH LOUISIANA	
Caddo light	9,965
Caddo heavy	3,445
Homer	5,150
Haynesville	7,775
DeSoto and Red River	4,240
Elm Grove	610
Bellevue	1,540
Cotton Valley	5,840
Urania	8,540
Total	47,105
ARKANSAS	
El Dorado	6,010
Lisbon	4,230
Smackover light	11,235
Smackover heavy	79,620
Stephens	1,420
Nevada County	1,400
Bradley	100
Total	104,015
Total both states	151,120
Total last week	158,350
Difference	7,230

Fewer Completions

The inactive operations also were reflected in fewer completions, only 15 being reported during the week in contrast to 27 of the previous 7-day period. With the exception of two, these completions were more or less of a routine nature. The two exceptions were carried in late reports of the previous week. These were J. W. Olvey's No. 1 Simmons, Section 15-18-13, Lawson-Urbana wildcat district of Union County, Arkansas, and Arkansas Fuel Oil Corp.'s No. 5 Logan, Section 28-10-12, Pleasant Hill area of northern Sabine Parish, Louisiana. All the completions added only 198 bbls. of new production although the gas output was boosted 82,500,000 feet due to J. W. Olvey's well making 65,000,000 feet.

Because of these conditions, together with the generally unfavorable market situation, operators in North Louisiana and Arkansas on the whole are contenting themselves with patiently waiting for the unexpected to develop to bring a revival of interest and activity in this division.

No New Field in Sight

With the possible exception of the Pleasant Hill area of northern Sabine Parish, there really is not a new field in sight for development in the immediate future. However, a thorough testing of some rank but promising wildcat district would be likely this summer should market conditions offer any encouragement.

At present hopes for any substantial new production lies in deeper drilling, namely in the Trinity horizon, possibilities of which have yet only been touched, and in the new fourth sand level of the Smackover Field of Arkansas. Drilling for the expected Trinity horizon pay so far has been confined principally to the Pine Island district of the Caddo Field, northwestern Louisiana. Production has been somewhat freakish with mostly gas but several wells nearing the interesting stage should throw some important light on the possibilities in that area.

Testing Fourth Sand

The new fourth sand in the Smackover Field is expected to bring the earliest developments as operators there are preparing for thorough drilling of that level despite the low oil prices. Since the bringing of Stewart and associates' No. 8 Murphy, Section 9-16-15, Union County, Arkansas, as a 1,000-bbl. producer two weeks ago, several companies have started to deepen wells formerly completed at shallower levels. Other tests already are near the pay level found in the Stewart well at 2,788 feet.

Some irregularity has been found in this level in the Peer Oil Corp.'s No. B-1 Palmer, a quarter mile north of the Stewart well. This test is drilling at 2,729 feet in gummy shale, or, deeper than the Stewart well. Calculations are that the formations are running 10 feet deeper. Humble Oil & Refining Co.'s No. 2-B Flenniken, a quarter mile south of the Stewart well is standing 1,900 feet in oil at a total depth of 2,776 feet. This oil, however, is very heavy, running 14.2 gravity, while that in the Stewart well was 30 gravity and better. Ohio Oil Co.'s No. 6 Murphy, same section, has an estimated 13,000,000 feet of gas with a light show of oil. This is one of the old wells being deepened.

There were no developments in the new Pleasant Hill Field of northern Sabine Parish, Louisiana. The next test expected in and the one which is looked upon as a key test is Moffett and associates' No. 1 Moore, Section 5-9-12. The 6⅝-inch casing has been cemented at 3,136 feet. This plug will be drilled out in a few days and the well tested. This test is southwest of the discovery wells of the Arkansas Fuel Oil Corp., which found the pay at depths ranging from 3,190 to 3,265 feet. Beckman & Freeman's No. 1 Logan, Section 28-10-12, north of the Arkansas Fuel Oil Corp.'s wells, is waiting orders as a result of getting only 1,000,000 feet of gas with a light spray of oil after deepening to 3,272 feet.

The Carterville area of northern Bossier Parish failed to draw any interest during the week. Louisiana Oil & Refining Co.'s No. 1 Blanton, Section 23-23-12, which blasted hopes of operators there for an oil field, has been closed in successfully as a 30,000,000-foot gasser. It blew wild for a week and for a time it was thought the well would be lost.

Detailed operations of the week, which follow, were somewhat limited as in many fields drilling was at a standstill and tests shut down because of high water.

LOUISIANA

Bossier Parish

In the Bellevue district, Humble Oil & Refining Co. is arranging to make a Halliburton test at 1,994 feet in No. 30 Bliss & Wetherbee, Section 15-19-11. The Texas Company's No. 14 Caplis, Section 24-16-12, Elm Grove still is shut down waiting on a standard rig.

Caddo Parish

Southeast of Shreveport, Arkansas Natural Gas Co. has erected a derrick for a test at No. 8 Cayle, Section 30-16-12. Further to the southeast, The Texas Company has just cemented 6-inch casing in No. 1 Long, Section 15-15-12. This latter test is at a depth of 820 feet.

Askew and associates have a rig up for No. 1 Elliott in Section 12-19-16. In the Waskom district, Bahan & Bahan are drilling lime at 2,370 feet in No. 2 Wilburn, Section 4-17-16. Six-inch casing has been cemented at 900 feet in Owl Oil Co.'s No. 1 Bell, Section 5, same area.

In the 21-15 district, Bussa & McGoldrick are preparing to standardize No. 6 Beckham, Section 26, and are waiting on a rig at a total depth of 1,650 feet. Dixie Oil Co. has a rig up for No. 8 Fitzsimmons, Section 14. This company in the same section has started drilling at No. 87 Robertshaw and is at 323 feet after having drilled out the 12-inch plug at 57 feet. On this same lease No. 86 was completed during the week pumping 6 bbls. daily from a depth of 1,736 feet. Gulf Refining Co.'s No. 13 Tyson in this same section seems to be running somewhat lower and is drilling in rock at 1,805 feet. Haynes Brothers, also in the same section, have started drilling at 450 feet in No. 1 Murray. The hole is at 450 feet, the 12½-inch plug having been drilled out at 200 feet. The Texas Company has a rig up for No. 13 Noel, same section.

Magnolia Petroleum Co., in Section 24, has cemented the bottom of the hole in No. 16 Dillon, this being at 1,750 feet. No. 20 Dillon in Section 23, has been completed at 1,620 feet pumping 12 bbls. daily. No. 20 Robertshaw in the same section is at 3,598 feet where 6⅝-inch casing will be set. Thomason and associates' No. 7 Muslow, Section 31, has been completed pumping 10 bbls daily. Ohio Oil Co. has started a test in Section 12 in its No. 25 Smith which is at 20 feet. In Section 22, The Texas Company has abandoned a derrick which it had erected for No. 6 Hernson.

W. D. Chew has built a derrick for No. 6 fee, Section 33-21-16. This is adjoining No. 5 fee, which is at a depth of 1,847 feet waiting on a standard rig. In the same section, Standard Oil Co. of Louisiana has cemented 6-inch casing at 1,809 feet in No. 183 Stiles. No. 184 Stiles still is only a derrick.

Falcon Drilling Co. completed the erection of a rig for No. 1 Schmidt, Section 27-20-15. Gulf Refining Co. has been forced to shut down because of high

(Continued on Page 105)

DEEPER TEST IN RICHLAND PARISH; SHOWING IN LAWSON-URBANA AREA

By Neil Williams

SHREVEPORT, La., May 2.—Although wildcat operations in Arkansas and north Louisiana have been somewhat disappointing from an oil standpoint recently and the past week were more or less of a routine noture, several tests are being watched for what light they may throw on future drilling.

One of these is Gulf Refining Co.'s No. 1 Wayne Land & Timber Co., Section 36-17-5e, Richland Parish, northeastern Louisiana. This test, having failed to find the pay sand in which previous tests have been completed as gas wells, is going deeper in order to make a thorough test of formations in that part of the parish. At present it is at 2,941 feet in gumbo. The gas sand in other tests has been found around 2,500 feet.

Gulf Refining Co.'s No. 2 Rhymes, Section 5-16-6e, also has found the pay but this test is at only 2,575 feet in red gumbo. Stovall Drilling Co.'s No. 1 Mitchell, Section 20-17-6e, has an estimated 3,000,000 feet of gas at 2,433 feet.

Operations in Richland Parish have been hindered by high water but generally wildcat areas have been less affected by floods than proven fields.

Lawson-Urbana Deep Test

Garrett Modiestte Drilling Co.'s No. 1 Union Saw Mill Co., Section 7-18-13, which is giving the Lawson-Urbana wildcat area of Union County, Arkansas, its first deep test, has a sand at 3,818-21 feet showing oil. The 6¾-inch casing is to be set at once at 3,618 feet.

In Winn Parish, Humble Oil & Refining Co.'s No. 21 L. & A., Section 28-10-2w, failed to find a showing in a core of green sand taken at 1,332-48 feet. Tunica Petroleum Co.'s No. 26 L. & A., Section 9-7-2e, LaSalle Parish, also has failed to find any oil showing. This is a shallow test. In it, the 6-inch casing was cemented at 756 feet and the plug drilled out for a test. It has a sand at 756-759 feet and gummy shale from 759-63 feet. The liner was set and the casing bailed dry but there was no showing. The liner then was pulled and the test cored at 763-70 feet but the green sand core also did not show any oil.

Three wildcat tests were abandoned during the week, these being Clark & Norton's No. 1 Ford, Section 32-23-13, Bossier Parish, Louisiana, and Wheeler & Wilbank's No. 1 Lanier, Section 3-4-3e, and Hincey & Macke's No. 1 Barrow, Section 29-5-2e, in Rapids Parish.

Routine wildcat operations were:

NORTH LOUISIANA

Bienville Parish

S. P. Borden's No. 1 L. & A., Section 9-15-7, is drilling in hard lime at 2,347 feet.

Bossier Parish

Clark & Norton have abandoned No. 1 Ford, Section 32-23-13, with the total depth at 3,271 feet. John Glassell, jr., and associates are drilling in shale at 1,181 feet in No. 1 Gibson-Tiger, Section 14-21-14. Magnolia Petroleum Co.'s No. 1 Dodson, Section 15-23-12, Carterville area, is at 2,688 feet. In the same district, W. R. Ramsey has started drilling and is at 450 feet in No. 1 Dodson, Section 16. In Section 22, the same operator's No. 1 Robertson is in shale at 2,800 feet. Palmer Corp.'s No. 4 Bossier, Section 9-16-11, is in a lime formation at

(Continued on Page 100)

Gulf Coast Production Shows Increase

Steady Decline in Spindletop Deep Sand Area, Though Daily Fluctuations Are Large. Salt Water Increasing

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., May 2.—Gross production of the Gulf Coast division for the first four months of 1927 totals 18,959,488 bbls., an increase of 7,712,772 bbls. over the same period in 1926. During the same period the gross output of the deep sand area of the Spindletop Pool was 7,872,105 bbls. compared with 416,736 bbls. in 1926. The big production there, however, was not developed until July last year. In August it was 2,423,022 bbls.; September, 2,995,570 bbls.; October, 2,566,366 bbls.; November, 2,570,310 bbls. and December, 2,827,280 bbls.

The gross production of the Gulf Coast division follows:

Month, 1927—	Daily Av.	Gross
January	169,987	5,269,597
February	157,485	4,400,580
March	156,051	4,837,581
April	148,391	4,451,730
Total		18,959,488
Total same months, 1926		11,246,716

The gross production of Spindletop deep sand area for the first four months of 1927 is as follows:

Month	Gross, bbls.
January	2,544,250
February	1,935,630
March	1,862,225
April	1,530,000
Total	7,872,105

It will be noted there has been a steady decline each month of this year.

The estimated daily average gross production in the Coastal region for the week ending April 30 is placed at 150,511 bbls., an increase of 3,532 bbls. over the previous week. The estimate for each pool is as follows:

Pool	Dly. Avg.
Boling	2,240
Batson	1,380
Blue Ridge	2,970
Big Creek	5,800
Barber Hill	900
Dayton	35
Damon Mound	910
Edgerly (La.)	680
Goose Creek	9,100
Humble	4,460
Hull	19,340
High Island	540
Jennings, (La.)	940
Lockport, (La.)	8,700
Markham	450
Nash	1,100
Orange	5,410
Orchard	50
Pierce Junction	8,150
Piedras Pintas	95
Spindletop	48,500
Saratoga	1,160
Sour Lake	4,925
Sour Liberty-South Dayton	3,621
Stark, (La.)	1,460
Vinton, (La.)	5,560
Welsh-Anse La Bute, (La.)	45
West Columbia	10,520
*Miscellaneous	1,470
Total	150,511

*Includes Nacogdoches, Washington and Kleberg Counties; Cameron, Calcasieu and Iberia Parishes in South Louisiana.

Southwest Fields

The estimated daily average for the southwest fields for the week is placed at 37,545 bbls., as follows:

Field	Dly. Avg.
Luling	18,050
Mirando-Laredo	14,700
Somerset	1,250
Calliham	40
Rockdale-Minerva	985
Lockhart, (Lytton Springs)	2,305
Miscellaneous	215
Total	37,545
Grand total for week	188,056
Grand total last week	184,909
Net increase	3,147

Wells Completed and Bailing

Nineteen wells were completed in the coastal pools during the week, of which one was abandoned and four were salt-water holes. Eight wells are bailing at the close of the week. The new production aggregates 11,845 bbls., of which 8,300 bbls. came from the Spindletop Pool. Early in the week the output there had dropped to around 4,300 bbls, so that even with the new wells the daily average for the week is less than it was last week. The production in the deep sand section there fluctuates widely from day to day, with the salt water percentage increasing.

The Magnolia Petroleum Co. extended the Spindletop productive limits 250 feet south and west with its No. 4 fee, which came in Wednesday flowing 3,000 bbls. at 5,025 feet. The Gulf Production Co.'s No. 9 Oakwood, to the north and west of the Magnolia company's well, bailed salt water at 5,000 feet, and its No. 10 Oakwood is preparing to drill into the sand for a test around 5,000 feet. The Yount Lee Oil Co.'s No. 27 McFaddin is flowing 1,000 bbls. and No. 30 McFaddin 3,200 bbls. No. 16 fee is pumping 300 bbls. and No. 19 fee 800 bbls. The Deep Sand Oil Co.'s No. 1 Rush got saltwater at 3,010 feet. The Sun Oil Co. set casing preparatory to testing a sand in No. 2 Price at 4,938 feet. It is in the extreme southeast corner of the deep sand pool. The Rio Bravo Oil Co. abandoned No. 101 T. & N. O. railway right of way in rock salt at 4,000 feet. It is one-half mile north of production.

The Marland Oil Co.'s No. 1 Prudent on the north end of the deep sand section of the Pierce Junction Pool, came in flowing 2,000 bbls. with a choke on at 4,700 feet. The Rio Bravo Oil Co.'s No. 6 P. F. staged a gas blowout at 4,000 feet.

In the Hull Pool, the Gulf Production Co.'s No. 11 Thomas will pump at 2,700 feet. The Mecom Oil Co.'s No. 2 Taylor got salt water at 3,900 feet. The Republic Production Co.'s No. 33 Dolbear, a workover, is bailing at 3,650 feet. The daily average production of the Republic Production-Houston Oil Co., operating jointly in the Dolbear 800 acres on the east flank of the dome, is 6,500 bbls. It is the lowest in nine years.

In the South Liberty-South Dayton district, the Gulf Production Co.'s No. 1 Palmer is pumping 30 bbls. at 3,700 feet and its No. 1 Bingle will make a pumper at 3,800 feet. The Associated Oil Co.'s No. 1 Hirschfield, reported last week as heading 560 bbls. at 3,970 feet, is putting out 200 bbls per day this week.

Well at Big Creek

The Texas Company's No. 3 fee in the Big Creek Pool in Fort Bend County came in flowing 1,500 bbls. of fluid, 600 bbls. of which is oil, at 4,100 feet.

In the Orange Pool, the Rex Petroleum Co.'s No. 14 Carbello is a pumper at 3,150 feet. The Texhoma Oil Co.'s No. 16 Chesson is bailing at 3,350 feet.

In the deep sand section on the north side of the Batson Pool, the Kirby Petroleum-Capitol Oil Co.'s joint No. 7 Hodges is flowing 300 bbls. by heads at 3,250 feet.

The Humphreys Corp. is preparing to test No. 4-B Kirby on the east flank of the dome at Barber Hill, Chambers County, at 4,017 feet. The company has two wells there making 500 bbls. combined.

The Rycade Petroleum Corp.'s No. 3 Myers in the Markham Pool in Matagorda County, is pumping 215 bbls. Moody Oil Corp. and John Deering's joint No. 1 Gray bailed salt water at 3,290 feet and is being drilled deeper.

In the Goose Creek Pool, the Gulf Coast Oil Co.'s No. 16 Gilliard is pumping 100 bbls. of fluid, 50 per cent oil, at 2,850 feet. It is a worked over well. The Lake Shore Oil Co.'s No. 3 Duke on the northwest side, is bailing at 3,460 feet.

The Sun Oil Co.'s No. 174 Texas Crude in the Saratoga Pool is bailing at 1,050 feet.

Two holes are bailing in South Louisiana pools. The Vacuum-Gulf joint No. 11 Miller in the Lockport Pool is bailing at 3,800 feet.

The Hercules Oil Co.'s No. 1 Paraffine in the Edgerly Pool is bailing at 3,250 feet.

Sale of Production

The Galena Signal Oil Co. has sold its producing property in the Humble Pool in the deep sand section to The Texas Company for $590,000. The production averages 1,000 bbls. per day, which wuld give the production a valuation of $590 per barrel. The Texas Company was the logical buyer of the production since it was operating on the same tract. The property is known as the Stevenson 520 acres on the east side of the Humble Pool. The Texas Company owns an undivided one-half interest in the block and Burt & Griffin the other half. The Farmers Petroleum Co., organized by J. S. Cullinan in 1913 shortly after he relinquished the presidency of The Texas Company, secured a lease on the Burt & Griffith interest. The tract was divided into 25-acre blocks, designated in alphabetical order, The Texas Company and the Farmers Petroleum Co., operating on alternate blocks. The tract proved to be one of the most prolific in the history of the Gulf Coast division, being opened in 1914. Later the Farmers Petroleum Co. was merged with the Republic Production Co. The Galena Signal Oil Co. of Texas came into possession of the lease through another merger with the American Republics Corp. The oil was considered superior for the manufacture of lubricating grades and was used by the Galena Signal Oil Co. in its refinery on the Houston ship channel. Recently high pressure stills were installed at the refinery and it is now making gasoline as well as lubricating stocks. No new wells have been drilled on the Stevenson lease for over one year, such work as was done being confined to working over and reviving old wells. The tract has been drilled conservatively, each location being 250 feet from the line with no crowding of offsets. Each company drilled about 35 wells on the alternate blocks, or a total of 70, with much room for more wells according to Gulf Coast standards, where close drilling is the rule instead of the exception. Those familiar with the property believe much more oil will be produced by drilling the present wells and also there is always the possibility of deeper sands, having in mind the experiences of operators at Spindletop, Goose Creek, Orange and other pools where production has been found from 4,800 to 5,200 feet. The so-called deep sand production on the Stevenson was found between 2,800-3,400 feet.

DRILLING IN THE POOLS

Spindletop

The Yount Lee Oil Co.'s No. 29 Gladys is rigging and No. 26 is around 1,400 feet. No. 4 Trembly is coring at 4,034 feet after sidetracking. No. 13 fee is pulling casing. No. 25 is going on the jack and No. 26 is a location. No. 39 McFaddin is reaming at 4,900 feet to set casing. The Texas Company's No. 1 H. Garrick, one half-mile north of production, is in a sand at 3,125 feet. The Rio Bravo Oil Co.'s No. 50 T. & N. O. is fishing for rock bit cone at 4,015 feet.

The Gulf Production Co.'s No. 10 Oakwood is preparing to set strainer at 5,000 feet for a test. It's another offset to the Magnolia company's No. 4 fee. Gulf company's No. 7 Roche is at 2,900 feet. The Magnolia Petroleum Co.'s No. 5 fee is at 2,655 feet. No. 3 fee is around 4,900 feet. The Walker Oil Co.'s No. 1 Quinn is deepening at 5,355 feet. J. O. Davis' No. 1 Gladys is drilling around 5,455 feet. The Hines Oil Co.'s No. 2 Parker is idle at 4,300 feet. No. 1 Gordon is drilling around 4,870 feet. The Lord Mothner Oil Co.'s No. 2 Banks is deepening below 3,700 feet.

The Sun Oil Co.'s No. 2 McLean is fishing at 5,025 feet. No. 9 is waiting on cement to harden with casing set at 5,100 feet. No. 10 McLean is drilling in hard shale at 4,145 feet. A derrick is up for No. 11. No. 12 is around 5,225 feet. No. 1 Price is drilling around 5,235 feet. The Atlantic Oil Producing Co.'s No. 8 McLain is drilling around 5,055 feet. The Grayburg Oil Co.'s No. 1 is at 4,900 feet taking a core of a sand.

Orange Pool

The Supreme Oil Co.'s No. 2 Jackson is fishing at 3,345 feet. The Rycade Petroleum Corp. will drill No. 5-B Cow Bayou deeper. The Roxana Oil Co.'s No. 13 Chesson is drilling deeper. The Gulf Production Co.'s No. 11 Peveto in the south end of the pool is drilling around 3,435 feet and No. 1 Granger is deepening.

Hardin County

On the east side of the Batson Pool, the proposed deep test of the East Side Oil Co.'s No. 1 Ogden is drilling around 2,545 feet. The Weldon Oil Co.'s No. 4 Teel is at 565 feet.

The deep test of The Texas Company in No. 3 La Jarza on the east side of the Batson Pool is drilling below 4,910 feet. The Sterling Oil Co.'s No. 6 Hooks is drilling at 1,465 feet. The East Batson Oil Co.'s No. 8 Counselman and the Deutser Oil Co.'s No. 1 Colorado are both standing idle at 1,230 and 1,300 feet respectively.

The Texas Company has the only well drilling in the old Sour Lake Pool. It is No. 1 Homestake now around 2,165 feet.

Liberty County

In the Hull Pool, the Republic Production Co.'s No. 98 Dolbear is deepening. The Gulf Production Co.'s No. 64 Phoenix is deepening at 3,345 feet. No. 86 Phoenix is drilling around 545 feet. A location has been made for No. 20 Baldwin. The Empire Gas & Fuel Co. has a location for No. 25 Barngrover. Both are in the south end of the pool. The Big Dome Oil Co. has a location for No. 1 Palmer. The Texas Company's No. 7 Hannah-Vacuum is a location. No. 2 Hannah is drilling at 4,065 feet, and No. 1 Armlein fee at 4,176 feet. The Hull Oil Co.'s No. 2 Harrison is drilling at 3,365 feet.

In the South Liberty-South Dayton section, the Humble Oil & Refining Co.'s No. 7 Welder is drilling deeper at 4,180 feet. It is on the west side of the Trinity River. The Gulf Production Co.'s No. 2 Marshall on the same side is around 3,545 feet.

Harris County

In the Goose Creek Pool, the M. & B. Oil Co.'s No. 6 Scorrgea, on the northwest side, is drilling around 2,600 feet. The Humble Oil & Refining Co.'s No. 56 Smith, on the east side, is at 4,265 feet. A derrick is up for No. 71 Smith. No. 10 Beaumont, in the bay, is at 2,535 feet. The Gulf Coast Oil Corp.'s No. 35 Galliard is drilling deeper.

The Sun Oil Co. is starting No. 39 Blaffer in the Humble Pool, as is Robert Keene's No. 75 Hermann.

In the deep sand area on the northwest side of the Pierce Junction Pool, the Rio Bravo Oil Co., a subsidiary of the Southern Pacific Railroad, is drilling No. 7 P. F. at 4,342 feet. No. 3 Bender is making gas at 3,625 feet. The Moody Oil Corp.'s No. 1 Whitehead is at 1,765 feet.

(Continued on Page 96)

Electricity

for

West Texas

Early in July

Pecos Valley Power & Light Company's new 24000 horse power plant, now under construction near McCamey, to serve fields in Crane, Upton, Reagan, Crockett, Pecos and Winkler counties.

Temporary Address

1016 Baltimore Ave. Kansas City, Mo.

Three More Tests in Kingsville Field

Humble Company Gets 20-Bbl. Well in Duval County Wildcat. Eighteen New Locations in Southwestern Texas

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., May 2.—Operations were prosaic in the proven fields of southwest Texas the past week with the exception of in the Kingsville Field where the Houston Oil Co., the second big company to enter the field, is nearly rigged up on No. 1 Kivlin in Block 7, Section 50, and is about to start three other tests. The Houston bought an interest in the Kivlin at 710 feet from A. C. Erwin and is replacing derrick and rig with bigger outfit and will carry the hole down to unannounced depths. This and the three tests to be started on the 1,400 acres of leases purchased from the Kleberg County Oil & Gas Co., along with four rigs running by the Humble, will keep the Kingsville Field active all summer.

Humble Oil & Refining Co. now has daily average production of 487 bbls. from eight wells, of which 377 bbls. is from three wells that are flowing and the remaining 110 bbls. from five wells on the pump. This production is coming probably from four different sands. Of the total daily production 427 bbls. is coming from four wells that are offsets on the north side of the proven area and coming from a sand at 2,235-78 feet. No. A-2 Dennett in the northwest corner of Block 1, Section 39 was the last of the four to be completed. It came in February 11, 1927, flowing 462 bbls. and is now averaging 190 bbls. No. B-1 Dennett, in the southeast corner of Block 19, Section 38, and a diagonal offset to the northwest is the oldest of the four and is flowing 75 bbls. daily. It was completed November 11, 1926. No. 2 Kleberg Trustee, a south offset to the B-1 Dennett and west offset to A-2 Dennett, is flowing 112 bbls. No. C-1 Dennett, and east offset to B-1 Dennett and north offset to No. 2-A Dennett, is on the pump and making 50 bbls. daily.

The other four producers, all of which are on the pump, are more than a half mile south and southeast. The No. 2 Flato at 2,930 feet is pumping 25 bbls. daily and is the deepest producer in the field. It is in the center of the E half Block 10, Section 40 and is more than a half mile south and a little west of the four named above. The other three producers are three-quarters of a mile to the southeast of the four wells named. State Land No. 2 at 2,300 feet and State Land No. 3 at 2,150 feet are each in submerged lands in San Fernando Creek and pumping 10 bbls. each and No. 1 King, a little to the east, is pumping 15 bbls. at 2,150 feet.

The Kingsville Field can produce a sensation most any time. Humble seems more determined to find out what the field is than to develop production. No. 1 Kleberg Trustee, a quarter mile south of the No. 2 Kleberg Trustee, was carried to 2,827 feet and was dry. It whipstocked and is now drilling at 3,017 feet and without waiting for results Humble is offsetting it 300 feet east with No. A-3 Dennett now drilling at 2,067 feet. A quarter mile south of No. 1 Kleberg Trustee No. 3 Flato, reported last week with a lot of junk in the hole, is making a lot of gas and oil from 2,240 feet and a separator was put in. Offsetting this 300 feet east Humble is drilling at 2,405 feet in hard sand rock in No. 1 Kivlin in the northwest corner of Block 4 of Section 39.

Completions

Seven completions in the Laredo territory last week resulted in one 45,000,000-foot gas well in proven territory and one 20-bbl. oil well in wildcat territory and five abandonments. In Southwest Texas outside of the Laredo territory there were 12 completions resulting in 1 gas well and 7 oil wells and 4 abandonments.

Humble Oil & Refining Co. has made a 20-bbl. well out of No. 4 Kohler, Survey 400, in Duval County, 7 miles nearly due north from the Simms gas well completed last year in Survey No. 666 and about 12 miles due north of the Cole gas field. Depth of this wildcat is 2,709 feet with sand at 2,697-2,707 feet. The sand is ample but the production is not great compared with the depth.

With the wildcat nature of the well in mind and the fact that it is the fourth well Humble has drilled on the block of some 30,000 acres with Reiter-Foster Oil Corp. holding one-fourth interest the well is important. It is also worthy of note that the well is on the Reynosa Escarpment on which most of the Mirando production is located and is about 9 miles up the escarpment northeast from the Carolina-Texas gas field in Webb County. It has some dry holes scattered about it, the Humble itself having abandoned its No. 2 Kohler, a mile to the west, but recently. The contract on the block of leases, all of which is in one ranch, called for six tests. The fourth has production. The well is in Survey 400 and is 660 feet from the west and south lines of the survey. It had a sand at 2,339-51 feet that tested a small amount of gas and the possible oil production was reported a week ago when it tested at 2,709 feet and made 250 bbls. of fluid of which 30 bbls. was oil. Casing was then set and the well completed last week.

Fourteen miles farther up the escarpment is where Schlessinger, on the Hahl ranch, had a showing of oil and Magnolia has completed a small gas well making 1,500,000 feet of gas at 4,094 feet. Humble is drilling the No. 5 Kohler at 2,920 feet in Survey 395, 3 miles southeast of No. 4, and has made location for No. 6 in Survey 400, located 60 feet from the west line and 660 feet from the south line, which brings it 600 feet, or two locations, west of No. 4.

The completion in proven territory in the Laredo district last week was a 45,000,000-foot gas well by the Houston Oil Co. and the Sun Oil Co. at the corner where Blocks 407, 408, 409 and 410 come together in the Servando Benavides grant in the territory midway between the Cole and O'Hern & Seaboard Pools in Duval County. Depth is 1,560 feet.

Elsewhere in the Laredo area Buffalo-Erie Syndicate abandoned its No. 2 and No. 3 Martinez locations on Block 2 in Zapata County a little southwest of the Alworth Brothers Pool. Earl K. Bateman abandoned location for his No. 2 Vela in Zapata County in Share No. 2.

MAVERICK COUNTY WELL INCREASES WITH TOOLS AGAIN LOST IN HOLE

By B. D. Stevenson

SAN ANTONIO, Tex., May 2.—Rycade Oil Co.'s No. 1 Chittim, in Maverick County, is making 29,000,000 feet of gas and about 150 feet of oil at a depth of 5,588 feet. It is 100 miles from nearest producition in southwest Texas. This well last November topped a sand at 5,517 feet that made about 4,000,000 feet of gas and quite a little high gravity oil. Later a separator was put in after the well had been drilled to 5,525 feet and it was found to be making 10 bbls. of oil. The oil was thought to be coming from the gas due to the high pressure. At 5,525 feet the well had a fishing job that tied it up for months. Only recently it resumed drilling and a week ago gauged 9,260,000 feet of gas. Both gas and oil are increasing. The gauge of 28,980,000 feet of gas is with tools lost in the hole again. Due to the rank wildcat nature of the well, it is attracting wide attention. An attempt is being made to get the rotary tools back on the hole in order to complete the fishing job. The well was drilled with cable tools and it was necessary to bring in a rotary rig to do the fishing in the first instance due to the gas pressure. Now the rig is being put back for this second fishing job.

Caldwell County Tests

Two wells in Caldwell County are struggling with the Austin chalk and Eagleford in an effort to make producers. Sutton & Smith, in No. 1 Carter, 4 miles north of Luling, are putting the well on the pump at 2,601 feet (drill stem measure). It is probably in the base of the Austin chalk and top of the Eagleford and when the bailer was run brought up about 2 gallons of oil with each bailer. The other well is Fred Adams' No. 1 Ellison at 2,335 feet and a few miles north of Sutton & Smith well. It is being given a small shot of nitroglycerin. It tested previously a little oil and the chalk has been found more porous here than usually. The Austin chalk frequently shows a little oil but many efforts to make a commercial well in it have all proven futile. The Eagleford always shows a little oil whether on structure or off but no commercial well has ever been completed in it.

Casing is being run in the Alamo Drilling & Leasing Co.'s No. 1 Szalwinski, in Karnes County, 1 mile east of Fall City, and the well will be ready to test sometime early this week. This well is 50 miles from any production. It had sand from 1,803-88 feet which showed oil under the ether test.

Duval County

Schlesinger Oil Corp.'s No. 2 Hahl has made location 330 feet to north line and 1,650 feet to east line Survey No. 60. Ralston M. Talbott's No. 1 Margarite, Survey No. 4, located 2,500 feet to northwest line and 1,320 feet to northeast line, is standing at 1,607 feet. Humble Oil & Refining Co.'s No. 12 Singer, Survey No. 4, located 2,600 feet to north line and 2,000 feet to west line, is drilling at 2,677 feet; No. 2 Welder-Wood, Survey No. 102, located 5,280 feet to south line and 4,500 feet to east line, is drilling at 1,440 feet. Humble-Reiter-Foster's No. 4 Kohler, Survey No. 400, located 660 feet to SW cor., is being placed on the pump at 2,709 feet, at which depth it made 250 bbls. of fluid of which about 30 bbls. was oil; No. 5 Kohler, Survey No. 395, located 1,080 feet to east line and 530 feet to south line, is drilling at 2,833 feet. Dixie Oil-Southern Crude Purchasing Co.'s No. 1 Gray, Survey No. 316, located 330 feet to NE cor., is rigging up.

Jim Hogg County

Holden and others' No. 3 Jones, Share No. 26, Block 136, located 330 feet to east line and 440 feet to north line, is drilling at 1,380 feet; Harry Hamilton and others' No. 1 Holbien, Block 44,

(Continued on Page 105)

Cintex Petroleum Co. abandoned No. 1 Peal, Survey 72, Block 5, in Webb County, at 3,034 feet, dry. Ray Woods abandoned the location for No. 1 Puig, in Block 5 of the Puig ranch, and T. P. Morgan abandoned No. 1 de la Garza, in Survey 335, Block 23 of the Carolina-Texas Field in Webb County, at 2,332 feet. He got about 5 bbls. of 46 gravity oil out of it.

Somerset Field

Elsewhere in Southwest Texas there were four completions of producers in the Somerset Field that made oil wells, three by the Magnolia in the Luling Field that made oil and one in the Adams Field in Medina County that made gas. In the Somerset Field Associated Petroleum Co. and N. A. Saigh are giving the field a little extension to the northeast and getting good wells. Associated started it with a 10-bbl. well in the southeast corner of the Kohler lease and moved north a few hundred feet and toward unproven territory and got a better one. Saigh, on the Frees lease, offset. Associated with a well that pumped 27 bbls. the second day in his No. 2 Frees at 1,500 feet and in Survey 49 of Bexar County. Associated's No. 14 Caruthers at 1,370 feet is a 5-bbl. well, No. 1 Ernst in Survey 266 a 4½-bbl. well and No. 12 Kohler a 15-bbl. well and No. 2 Kohler a 15-bbl. well. Saigh's No. 2 Frees' initial production the first day was 45 bbls.

In the Adams gas field in Medina County Temeco Oil Co. completed its No. 1 Chandler in the northwest corner of Survey No. 461 at 970 feet, making 27,500,000 feet of gas. It is on the edge of the developed area of gas and one of the best in the field.

Luling Field

In the Luling Field in Caldwell and Guadalupe County Magonlia has completed three wells. No. 3 Carter, in the Cottle Survey, at 2,156 feet is a 25-bbl. well; No. 18 Trammell, in Reaville Survey, at 2,186 feet is a 110-bbl. well, and No. 14 Procter, in Henry Survey, at 2,114 feet is an 80-bbl well.

Magnolia, in keeping with its announcement recently to start no new tests but to complete wells drilling, is left with only one rig running in the Luling Field. It is drilling at about 2,000 feet in No. 5 W. Branyon, which will be completed probably this week or next. In the Laredo territory Magnolia has three wells, all of which are pretty well down towards completion. In each of these fields Magnolia up to a short time ago was running ten or a dozen rigs.

Abandonments during the week in territory outside of Laredo include the abandonment of the Houston Gulf Gas Co.'s No. 3 Holmes Heard in the Refugio gas field at 2,100 feet due to difficulty in completing it. Sun Oil Co. abandoned No. 1 Talley in Caldwell County, in the eastern part of the county at 2,530 feet. E. T. Williams abandoned No. 1 Sowden, in Terrell County, in Survey 71, at 3,150 feet and Transcontinental abandoned No. 1 Stevenson, in Val Verde County, at 4,412 feet in Survey 8, Block 4. It is being made into a water well for the ranch.

New Locations

Eighteen new locations are announced for the week in Southwest Texas. Five in Laredo country include Alworth-Stevens-Hild's No. 12 Garza, in Block 3, Survey 39 of Zapata County, 200 feet from the southeast and northeast lines, in the Alworth Pool; and Houston Gulf Gas Co.'s No. 1 Barnsley, in Block 9, Survey 268 of the Carolina-Texas Field. J. H. Winch's No. 1 Bustemente, in Zapata

(Continued on Page 140)

The Sensation of the Convention of the Natural Gas Association of America Will Be the New Principle in Orifice Meter Design Developed by Foxboro.

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Drill Deep Test in Torchlight Field

Producers & Refiners to Develop High Gravity Oil Area in Big Horn Basin. Baxter Basin to Get Play

By Frank B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., Apr. 30.—The Producers & Refiners Corp. will drill a deep well in the Torchlight Field this season, the first deep hole in that field. Last year, C. E. Orchard of Wheeling, W. Va., took over the holdings of the old Torchlight Oil Co. comprising 240 acres. The wells have been idle for about two years because of the destruction by fire of the power house and pumping equipment.

Mr. Orchard has leased the 240 acres on an operating contract with the Producers & Refiners Corp., a deep test to be completed by April 15, 1928. The Producers & Refiners Corp. is clearing away the remains of old pumping power and will install new pumping equipment to operate the shallow wells.

Torchlight Field was opened early in 1916 about the time the Grass Creek Field came in with shallow production. At that time it appeared that the Big Horn Basin country was destined to become the oil region of Wyoming because of the shallow wells and low cost of drilling. Grass Creek at one time had over 400 producing wells at an average depth of 900 feet. However, the deeper areas like Salt Creek and Big Muddy brought the main part of the oil industry of this region to the central part of Wyoming.

The Torchlight Field obtains a high gravity oil that is a light green in the tank, but a cherry red when held in a bottle against the light, from the Torchlight sand, one of the Frontier members. Below this sand is the Peay, another member of the Frontier formation, then the Cloverly with two possible horizons, the Morrison, Sundance, Embar, Tensleep, Amsden and Madison. The sands from the Sundance down will carry black oil if production is found.

This field is in Big Horn County with Basin as its rail point, the field lies about 6 miles due east of Basin and has a pipe line to Greybull where the oil is shipped to the Standard of Indiana's refinery there.

Baxter Basin

In southern Wyoming, Sweetwater County is expecting a play in the Baxter Basin Field due to the proposed gas line from Baxter Basin to Salt Lake City, Utah. Four new rigs are reported ready to move in for as many different companies on the Hiawatha Dome which lies on the Colorado-Wyoming line. This structure was drilled last summer by the Myers Syndicate and the result was a gasser. This well was across the line in Colorado, but some new wells will be drilled in Wyoming this summer.

An odd truck load went into the Hiawatha Dome last week and is a good example of the present-day requirements of a crew at a drilling well on a wildcat location. This truck left Rock Springs with casing piled on each side of the body and between the two piles of casing was a cow, securely tied, that was destined to furnish fresh milk for the Myers Syndicate camp. While there are many range cattle in the Hiawatha Dome vicinity, the range cows are too wild and have hardly enough milk for their calves, so when a camp wants fresh milk, a regular cow of the milch type is brought in.

A wildcat is to be drilled north of the tracks near Rock Springs, Sweetwater County, by the Boar's Tusk Oil Co. of that city. Money secured to assure the well being drilled to about 4,000 feet.

Medicine Bow

The Producers & Refiners Corp. and the Marland Oil Co., drilling a joint deep test in the Medicine Bow Field, Carbon County, Section 25-21-79, have a showing of oil in the shale at 4,000 feet that is to be tested for its commercial possibilities. The show has placed 300 feet of fluid in the hole.

The Texas Production Co. has a gasser in the La Barge Field in Lincoln County and the Rainbow Oil Co. is reported to have found a producer good for 200 bbls. in the central part of the development. The California Oil Co. has petitioned the State Board of Equalization for a permit to lay a pipe line from the field to a rail point and the hearing is being held in Cheyenne. The company proposes to lay this line before December and there is little doubt but that the permit will be granted.

Mrs. Nettie Thompson, well known in the northwest of Wyoming as an operator, is preparing to drill a wildcat south of the Elk Basin Field in Park County, and has moved in two cars of equipment. This test is to be put down on a 2,500-acre lease adjoining the Henderson Petroleum Co.'s leases. Mrs. Thompson has sold interests in the well to many people in that corner of the State.

The Montacal Oil Co., operating in the Baxter Basin Field, Sweetwater County, is considering drilling a deep well to the Sundance sand on the company's leases. The firm has a gas well good for 25,000,000 feet on Section 23-17-104, with a lost string of tools in the bottom of the hole.

Drilling Record

The Continental Oil Co. has hung up a new record for making hole in this region. The last completion on the Humphrey lease in the Big Muddy went to 3,200 feet and took just 25 days from the surface to the present bottom of the hole; the hole is as straight as a plumb line.

A threat of water encroachment in the Lost Soldier Field is troubling the operators. Some wells are showing water that pumps clear one day and muddy the next and some of the wells that have been drilled in recent months started off with production up in the hundreds of barrels but began to show water almost at once. It is feared the water may be coming from wells drilled many years ago before the Government and State started the present system of supervision of plugging abandoned wells and that these old holes are allowing water to come into the producing sands.

Utah Operations

In Utah the field work is routine. On the Shafer Dome, 5 miles south of the Cane Creek discovery well, the test of the Midwest Refining Co. and the Utah Southern Oil Co. is drilling at 5,765 feet, with the hole caving badly. The bit is in a variegated shale.

The Cedar Mesa well of the Utah Southern Oil Co. and other interests, in San Juan County, is drilling at 2,450 feet in a limestone and this well has opened a flow of salt water, making about 10 bbls. an hour.

Operations in Colorado

In Colorado the gusher of the Midwest Refining Co. at Iles Dome, Moffat County, is making about 1,400 bbls. daily through a partly closed valve and 2-inch lead line. The pressure has gone up to 526 pounds since the well has been partly closed in. This flow is coming from the Nugget sand at the base of the Jurrassic.

The Repollo Oil Co.'s well near Boulder is having trouble with a collapsed joint of casing at 4,720 feet and a swedge is being run to try and straighten same. If this fails the string will be pulled and heavier pipe set.

In the new Walden Field the Continental Oil Co. has a shale well at 600 feet and a test is now being made of the oil to see if it will stand up in production. This well was started to go about a mile deep to the pay found in the discovery well, but may be stopped at the shallow depth if the oil there proves large enough to warrant. This shale oil has a gravity of 39 degrees and No. 3 well of the Continental Oil Co. is hitching on the beam after spudding in.

Near Fort Lupton, Colo., a strike of shale oil at 1,200 feet is causing some excitement. The well is being drilled by a local syndicate and is located about 5 miles southeast of Fort Lupton, on the Henry Smith farm. It is a wildcat and far from any production or field.

The Texas Production Co. has its wildcat on the Wilson Creek structure at 3,425 feet and has cemented a cavey hole. Drilling is expected to start again within a day or two.

Frank E. Kistler & Co. has started testing a hidden structure in Section 35-25-88 in southern Wyoming. The Sullivan Machine Co. has a diamond drill at work on what is known as the Separation Flats structure, Carbon County, and will drill holes from which the geologists will correlate the geology beneath the surface.

Montana Development

In Montana, the Ohio Oil Co. has secured the acreage wanted in the Dry Creek area, 6 miles east of Red Lodge, Carbon County, and the company now has a block of 9,000 acres under lease. The company is now getting ready to drill a deep well to test the area and will drill this well with a combination rig, using a derrick 124 feet high so as to accommodate a rotary string, but the hole will be drilled most of the way with cable tools.

Fuel oil will be used on the well until the Eagle sand is reached, when enough gas is expected there to carry on the work. This test will go to 5,000 feet if nothing commercial is found above that level.

In the Sunburst Field, the Abell Oil Co. brought in a good well in the Ellis sand in Section 35-35-2 that will make around 100 bbls.

The Carter Oil Co.'s wildcat on the Marias River, 7 miles south of the Sunburst Field, reached the contact of the Ellis and Madison lime and found water. The flow came up to the top of the hole and went over the derrick floor. The well is now shut down waiting on further

(Continued on Page 84)

FOREMOST FIELD WELL GETS SAND; TURNER VALLEY ACREAGE DEALS

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 30.—In the Foremost Field, southeastern Alberta, Devenish Petroleums Ltd. No. 1, LSD 5, Section 27-5-14w4, is reported to have got an oil sand at 2,510 feet. The sand was apparently encountered in the top of the Dakota formation, just after the bit left the Benton shale. Bailings from the well showed considerable traces of oil. The water flow at 2,506 feet has been cemented off and the well is being drilled into the sand. The 10-inch casing will be run and the sand given a thorough test.

It is announced that William Maughn and associates of Calgary are arranging to deepen the oil Stokes-Stephens well, drilled in 1914 in the Verdigris Coulee area about 12 miles northeast of Coutts, Alberta. It is reported that the rig and irons at the Urban Oils test in Section 4-1-15w4 will be moved to the new location as soon as the present work on the Urban test is finished. The Stokes-Stephens test was drilled in Section 22-2-14w4, and was abandoned at 2,485 feet, without reaching two of the lower sands, which in subsequent deep tests in the border area, have shown oil indications.

East of Coutts, the Imperial Oil, Ltd., Erickson Coulee No. 1, LSD 13, Section 8-1-12w4 is fishing at 3,570 feet. In the Ribstone-Blackfoot area, eastern Alberta, Imperial-Ribstone No. 1 Section 5-44-1w4, is at 3,470 feet and drilling.

In the Jumping Pound district, 25 miles west of Calgary, Imperial-Bow River No. 1, LSD 15, Section 12-25-5w5, is at 5,175 feet, with 6-inch casing run to 5,125 feet. In the Highwood district, Imperial-Highwood No. 1, LSD 3, Section 36-18-3w5, is drilling for 12½-inch casing at 2,200 feet. Further south, the Imperial-Rice Creek No. 1, Section 4-14-2w5, abandoned at 5,747 feet, is pulling the 6-inch casing.

Turner Valley

In the Turner Valley Field, southwest of Calgary, Royalite Oil Co.'s No. 7 Rotary test, LSD 3, Section 13-20-3w5, is drilling below 2,288 feet. Imperial-Millarville No. 1, SW, Section 26-20-3w5, is working on derrick. Imperial Oil, Ltd. has taken over a further block of acreage in the north end of the Turner Valley, covering the SW, Section 9-21-3w4, at $200 an acre and one-eighth royalty. Chicago interests are reported to have taken over 240 acres in Section 4-21-3w4 at $650 an acre. Royalite Oil Co. has put into commission a 60 horsepower caterpillar tractor for hauling heavy machinery to the various locations in the Turner Valley Field; the tractor handling three 10-ton trailers.

McLeod Oil Co. No. 3, LSD 16, Section 1-20-3w5, is reported at 1,400 feet and drilling for 12½-inch pipe. McLeod No. 2, same LSD, which in its unfinished state has been making 50 bbls a day of crude naphtha at 4,045 feet, is reported to have resumed drilling. Illinois-Alberta Oil & Refining Co.'s No. 1, LSD 14, Section 12-20-3w5 has slightly increased its crude naphtha production, and is now making better than 90 bbls. a day.

Great West Oils No. 1, SE, Section 7-20-2w5, is at 5,475 feet and fishing out some casing. New McDougall-Segur No. 2, LSD 14, Section 12-20-3w5, is working on derrick. New McDougall-Segur No. 1, same LSD is maintaining a daily output of around 75 bbls. of 55 gravity crude, and has shipped about 20 cars of oil since it was brought in No. 2, which will spud in early in May, will be a test of the Dakota sands from which No. 1 secures its production at 2,595 feet.

Home Oil Co. No. 1, LSD 10, Section 20-19-2w5, is at 3,980 feet and run-

(Continued on Page 96)

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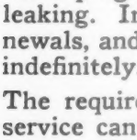

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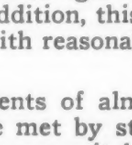

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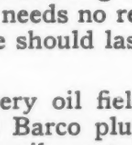

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Seal Beach May Exceed 100,000 Bbls.

Depends Upon Policy of Marketing Companies and Ability of Operators to Dispose of Production

By L. P. Stockman
Staff Correspondent. California Fields

LOS ANGELES, Calif., Apr. 30.—The recent severe cut in crude oil and the drastic decline in the price of gasoline has no doubt weakened the local situation but up to the present time no general curtailment has been undertaken by producers of crude oil. The Associated shut in a few small producers in the Santa Maria Field and, while 3,000 bbls. additional at Elk Hills was shut in during the latter part of March, this was Naval Reserve oil and its curtailment was due to the failure of the Navy Department to accept one of the three bids made for an exchange of crude oil for Diesel and fuel oil over a period of five years. Conditions in the San Joaquin Valley fields are very sluggish due to the reaction resulting from the prevailing low price of crude oil and the rather unfavorable outlook. No general restrictive measures have been undertaken in that section yet but future drilling operations will undoubtedly be slowed down somewhat.

Seal Beach

The daily production at Seal Beach has started a climb which may carry it well above the 100,000-bbl. mark predicted for it more than a month ago, unless a considerable number of new wells are shut in. The peak production of Seal Beach depends to a large extent on the policy of marketing companies and the ability of operators to dispose of their production. The California Petroleum, Marland, General Petroleum, Richfield, Standard, California Eastern and Pan American all have a number of new wells nearing completion and, while these companies will be able to handle their own production, independent operators will not be in as favorable a position. It has been suggested that a number of the producers in the town lot section pool their production and store whatever the operating committee is unable to dispose of. This would entail the construction of considerable tankage but those back of this movement claim to have sufficient financial backing if the project proves feasible. It is the present intention of this group to line up as many independent producers as possible in the hope of working out a producing and marketing organization. The taking over of a small refinery is also on the cards and, while this is apparently a large undertaking and may not work out, still there is a possibility that the present movement may prove the nucleus of another producing, refining and marketing unit. This would undoubtedly have a disconcerting effect on marketing conditions, particularly in southern California where present competition is as keen as a razor blade, due to the large number of companies bidding for gallonage.

Getty's Big Well

The outstanding completion in the Seal Beach town lot area during the week was Paul Getty's No. 4 Cleaver, which blew in with a tremendous pressure and threatened for a time to get beyond control. On a preliminary production test the well blew in with a roar and the high gas pressure partially wrecked the gas trap and presented a very threatening condition until the initial flow was successfully killed. Due to the lack of adequate lease storage and the inability of this operator to make satisfactory pipe line connections with some marketing company, no accurate gauge of the initial output is available. It has been variously estimated at from 5,000 to 10,000 bbls. per day but, due to the exceptionally high gas pressure and the safety factor usually taken into consideration, the well has been beaned down considerably. Completion data is being withheld but the well is reliably reported to have made 3,000 bbls. from approximately 4,700 feet before being killed. Paul Getty's No. 3 Cleaver came in under perfect control from approximately 4,695 feet and it is making 4,000 bbls. of exceptionally clean 27.8 gravity oil daily. This output is flowing through a one-half inch bean under a pressure of 850 pounds. Getty has one more well standing cemented just above the pay and it can be completed at any time, but due to the fact that some difficulty is being experienced in disposing of production, matters are not being pushed.

H. J. Barneson, who took over the Bankline Oil Co.'s No. 1 Tincher, finished it a few days ago at 4,744 feet but, due to the lack of storage facilities and the inability to make pipe line connections immediately, the well was shut in a short time after being finished. It was given a 12-hour production test and, flowing through a seven-eighths inch bean under a pressure of 650 pounds, it tanked 770 bbls. of exceptionally clean 27.6 gravity oil during this period. This is at the rate of 1,500 bbls. daily. The Marland has just completed No. 7 Bixby after deepening it from the Bixby to the lower or Selover zone at 4,750 feet. It was returned to production flowing 1,300 bbls. of clean 26.8 gravity oil daily. It is flowing through a three-quarter inch bean under a pressure of 750 pounds and, like all of the wells finished in the Selover sand up to the present, it is showing a cut of considerably less than 1 per cent. This well was originally finished in the Bixby zone early in March at 4,464 feet, from which depth it came in flowing 1,660 bbls. of clean 24.9 gravity oil daily. The Marland, as a result of the town lot drilling in the western part of the field, was forced to drill a number of offsets in the extreme western part of the Selover lease and the company should have two or three of this group on production within a few days. Unusually fast footage has been made and four wells are already standing cemented just above the pay preparatory to completion.

Nearing Completion

The California Petroleum should finish three new wells in the town lot section within two or three days and this trio will be followed into production by two more about a week later. These five will be augmented by six more, the depths of which range at present from 3,500 feet to 4,200 feet. The General Petroleum should also list a new well or two in the near future and, although the company's Wassom property did not appear to be any too favorably located, all anxiety felt can now be put at rest as No. 3 picked up the top of the pay and was cemented a few days ago. The top of the sand at this point is a little deeper than usual, having been encountered at 4,778 feet. The General Petroleum has eight other drilling projects on this lease and it is hoped all will pay out and return a satisfactory margin of profit. George F. Getty is expected to finish three new wells during the coming week and three more about 10 days later. Up until a late hour Mr. Getty had not succeeded in making satisfactory pipe line connections but, in view of the success which he has achieved in all California fields of recent origin and his willingness to co-operate at all times, it is hoped he will be able to line up his production with some major company. In this instance the legitimate independent producer is being penalized because of the action of fly-by-night promoters and fair weather producers who participate in periods of flush production and fade out in times of distress.

Drilling Operations

E. J. Miley is another of the old-line operators who may possibly be penalized because of the wild scramble for production at Seal Beach, although Miley can expect some co-operation from the Associated or California Eastern Oil Co., since he has played with both on previous occasions. Miley originally had a 10-well program outlined at Seal Beach but this was later reduced to two strings because of the apparent overproduction situation bound to result from intensive drilling. Work on the two wells selected was pushed ahead with all speed possible

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S-T-R	Depth	Status
Smith Pet. Co., No. 1 Johnson, Hawthorne	17- 3-14	6,215	testing
General Pet., No. 1 Smith, Potrero	35- 2-14	4,502	dismantling
General Pet., No. 1 Guiberson, Potrero	35- 2-14	rig	wait. devel.
Cal. Eastern, No. 1 Cypress, Potrero	27- 2-14	2,800	hd. sd. drilling
Associated, No. 1 Cypress, Potrero	34- 2-14	4,450	drilling out
Associated, No. 2 Cypress, Potrero	2- 2-14	....	location
Getty, George F., No. 1 Cypress, Potrero	35- 2-14	rig	wait. devel.
Getty, Paul, No. 1 Cypress, Potrero	35- 2-14	rig	wait. devel.
California Pet., No. 1 Sutton, Potrero	34- 2-14	rig	wait. devel.
California Pet., No. 1 Armour, Potrero	35- 2-14	rig	wait. devel.
Cole, Fred E., No. 1 Cypress, Potrero	35- 2-14	rig	wait. devel.
Dill Oil Co., No. 1 Cypress, Potrero	35- 2-14	rig	wait. devel.
Walker, Fred, No. 1 Cypress, Potrero	35- 2-14	rig	wait. devel.
Dominguez Extension, No. 1 Compton, Dominguez	22- 3-13	5,530	bailing
Getty, George F., No. 1 Tubbs, Rivera	25- 2-12	rig	rigging up
Circle Oil Co., No. 1 Pomeroy, Manchester	22- 3-14	2,780	hd. sd. drilling
Standard, No. 1 University, San Fernando	15- 2-15	5,990	abandoning
Shell, No. 1 Mission, San Fernando	4- 2-15	mtl.	building rig
Sou. Calif. Drlg. Co., No. 1 Matteson, El Segundo	1- 3-15	4,870	redrilling
Petroleum Sec., No. 1 Weston, El Segundo	27- 4-14	2,270	hd. sd. drilling
E. J. Robinson, No. 1 Carr, San Juan Capistrano	13- 8- 8	2,414	suspended
Cardiff Oil Co., No. 1 Oceanside, San Diego	24-13- 4	2,795	sd. sh. drilling
Oceanside Oil Co., No. 1 Pacific, San Diego	23-11- 5	3,210	suspended
Petroleum Sec., No. 1 DeBaker, Bandini	18- 2-12	5,815	abandoning
General Pet., No. 1 Lomita, Sunset Beach	19- 5-11	5,150	gr. sd. drilling
Fisher & Co., No. 1 Rinz, Saugus	27- 5-16	rig	rigging up
Reliance Home Inv. Co., No. 1 Leuzinger, Los Angeles	8- 3-14	925	sd. drilling
Shell, No. 1 Allec, Placentia	31- 3- 9	rig	rigging up.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Associated, No. 1 Smith, Kettleman Hills	12-23-18	2,043	suspended
Bolsa Chica, Well No. 1, Kettleman Hills	30-23-19	2,365	suspended
General Pet., No. 1 Burbank, Kettleman Hills	30-23-19	3,165	flshing
General Pet., No. 1 Dome, Kettleman Hills	26-22-18	520	land 18⅝-in.
C. C. M. O., No. 1 McGlashan, Kettleman Hills	17-24-19	2,490	sd. sh. drilling
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	2,195	bl. sh. drilling
Ahlburg Gas Co., Well No. 1, Kettleman Hills	7-23-23	rig	standing
Milham Explt'n., No. 1 Kettleman, Kings County	2-22-17	1,870	sd. sh. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	3,030	hd. sd. drilling
California Pet., No. 1 Camarillo, Ventura County	21- 2-20	2,450	hd. sd. drilling
C. C. M. O., No. 1 Hobson, Ventura County	22- 3-24	6,035	D. P. stuck
C. C. M. O., No. 1-B Hobson, Ventura County	16- 3-24	3,660	br. sh. drilling
Continental Oil Co., No. 2 Newhall, Ventura County	36- 4-18	480	sd. drilling
Continental Oil Co., No. 1 Burnham, Ventura County	22- 5-18	1,850	sd. drilling
Milham Explt'n., No. 1 Sexton, Ventura County	19- 3-22	7,100	fishing
Standard, No. 1 Camarillo, Ventura County	29- 2-20	4,950	reaming
Standard, No. 1 Montalvo, Ventura County	17- 2-22	5,055	drilling out
Petroleum Sec., No. 1 Diablo, Ventura County	4- 4-18	1,700	hd. sd. drilling
Rio Grande, No. 1 Canet, Ventura County	9- 3-23	4,962	pipe bad
Parkford, E. A., No. 1 Strathern, Ventura County	5- 2-18	2,585	sd. sh. drilling
Star Petroleum, No. 1 Canet, Ventura County	13- 3-23	3,560	sd. sd. drilling
Richfield Oil Co., No. 1 Janes, Ventura County	16- 5-18	1,793	gr. sd. drilling
Richfield, No. 27 Piru, Ventura County	35- 5-18	1,495	sd. drilling
Superior, No. 1 Pena, Ventura County	18- 4-17	3,832	sd. sh. drilling
Milham Explt'n., No. 2 Buttonwillow, Kern County	8-28-23	4,645	sd. sh. drilling
Milham Explt'n., No. 3 Buttonwillow, Kern County	7-29-24	1,218	bl. sh. drilling
Pacific Eastern, No. 1 Bakersfield, Kern County	6-30-28	4,075	drilling out
C. C. M. O., No. 1 Quinn, Delano	23-25-27	1,581	gr. sd. drilling
Muroc Dev. Co., No. 1 Rosedale, Kern County	13-29-26	760	sd. drilling
Standard, No. 1 Bacon, Kern County	27-28-20	rig	rigging up
Marland, No. 1 Jacalitos, Fresno County	22-21-15	4,275	gr. sd. drilling
Petroleum Sec., No. 1 Kenioe, Monterey County	2-22- 9	2,180	hd. sd. drilling
Birch Oil Co., No. 1 Porterville, Tulare County	13-20-26	120	sd. drilling
Ozena, No. 1 Allensworth, Tulare County	26-24-24	2,300	abandoning
Grafford, C. W., Well No. 1, Tulare County	26-24-24	2,525	abandoning
Richfield, No. 1 Wreden, San Luis Obispo County	10-29-17	310	gr. sd. drilling
Shell, No. 1 Cowell, San Mateo County	16- 5- 5	3,081	hd. sd. drilling
Shell, No. 1 Murphy, Petaluma	29- 5- 6	4,992	hd. sd. drilling
Talbot Oil Co., Well No. 1, Alameda County	15- 3- 3	605	sd. sh. drilling

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Year To Date	Same Time Last Year
Crude oil	252,161	36,023	299,170	42,739	2,541,416	4,430,380
Fuel oil	.....	.....	276,678	39,525	2,964,021	2,063,954
Diesel and gas oil.	.....	.....	153,634	21,948	1,173,295	709,680
Gasoline	249,220	35,603	254,896	36,414	2,386,095	1,655,456
Tops	.....	.....	.....	.....	.....	149,906
Coastwise:						
Crude oil	625,973	89,425	339,431	48,490	8,233,601	7,804,252
Fuel oil	310,750	44,393	236,569	33,796	4,029,388	2,766,905
Diesel and gas oil.	.....	.....	8,494	1,213	67,969	98,275
Gasoline	221,459	31,637	249,838	35,691	2,594,076	2,412,747
Kerosene	.....	.....	2,498	357	43,103	68,249
Tops	.....	.....	.....	.....	.....	205,636
Exports—						
Crude oil	226,536	32,362	108,637	15,520	1,168,689	864,111
Fuel oil	586,786	83,827	575,989	82,284	8,114,472	5,101,207
Diesel and gas oil.	76,671	10,953	67,497	9,642	370,393	123,266
Gasoline	18,203	2,600	65,941	9,420	532,995	1,491,794
Tops	154,833	22,119	.....	.....	227,204	.....
Kerosene	170,361	24,337	77,686	11,098	872,487	812,203

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil.	73,645	10,521	.....	.....	325,103	486,570
Gasoline	.....	.....	.....	.....	811,430	452,670
Tops	.....	.....	.....	.....	.....	73,698
Lubricants	.....	.....	.....	.....	111,970	104,088
Coastwise:						
Fuel oil	148,206	21,172	46,587	6,655	1,885,240	1,745,078
Diesel and gas oil.	.....	.....	.....	.....	134,308	.....
Gasoline	55,980	7,997	48,770	6,967	1,409,700	1,218,865
Kerosene	.....	.....	.....	.....	30,674	122,623
Exports—						
Fuel oil	.....	.....	.....	.....	492,227	713,889
Gasoline	214,087	30,584	.....	.....	1,301,722	761,886
Kerosene	.....	.....	95,781	13,540	452,695	647,748
Lubricants	.....	.....	.....	.....	9,120	18,051

and as a result both are expected to be finished during the next 10 days. The Standard is only running three strings of tools in the Seal Beach Field and it is hardly likely the present program will be changed. This company has just brought in No. 10 San Gabriel at 4,760 feet and, while no accurate figures are available due to the fact that the first 24-hour production test has not been concluded, it is flowing at the rate of 3,000 daily. The Associated's No. 4 Bryant came in a short time later and is flowing at the rate of 2,500 bbls. a day. This is the first Selover sand completion of the Associated and this property is located on the highest point of the structure. The Petroleum Securities should finish three or four new producers in the town lot section within 10 day and will, barring the development of any unforeseen trouble, finish 8 or 10 more within 30 days. The Superior, Hart-White Syndicate, Universal Consolidated, A. J. Delaney and several other independent operators have picked up the pay and are running in pipe.

Huntington Beach

There were only two wells finished in the Huntington Beach Field, both by the Standard Oil Co. The largest was No. 7 on the Pacific Electric property, which parallels the ocean front and has been one of the most productive pieces of acreage in the entire town lot area. This new well, drilled to 4,368 feet and finished with a 6¼-inch oil string, came in flowing 1,425 bbls. of exceptionally clean 26.5 gravity oil daily. On Lease B just north of the town lot area the Standard finished No. 59 as an 860-bbl. flowing well from 4,353 feet, the oil being clean and testing 25.8 degrees. The Standard's next completion at Huntington Beach should be No. 5 Pacific Electric and this will probably be followed by No. 50 on Lease B. The San Martinez Oil Co.'s outpost on Ninth Street has all the earmarks of a duster so far as deep production is concerned, although it may be possible to plug back and secure some oil at 3,150 feet. The possibility of developing a lower horizon, however, is quite unfavorable and the outlook at 5,200 feet is discouraging. Daily production in the Huntington Beach Field has been exceptionally stable and will probably continue so for some time, although slight declines can be anticipated as the future trend will be downward due to the settling of old wells.

The Chanslor-Canfield Midway Oil Co. finished another of its periodical completions in the Torrance Field but this new well, in contrast to its immediate predecessors, was an exceptionally small one. The company's new producer is No. 70 Torrance, which started off at 75 bbls. daily from an even 3,800 feet. The Union killed No. 4 Trust in the Rosecrans Field, which was recently put on a production test after being redrilled and deepened to 6,499 feet. The cut, as shown by the initial production test, failed to clean up and the company deemed it advantageous to recement in the hope that this would insure clean commercial production. At Dominguez the Shell finished No. 37 Reyes and it is doing 155 bbls. of rather dirty oil from 4,225 feet. In comparing the completions finished in the Dominguez Field from time to time with those put on production in other districts, it must be remembered that the Union and Shell are still adhering to the gentleman's agreement which limits the penetration into the oil-bearing formation.

Long Beach

With the spudding in of No. 9 Cresson at Long Beach a few days ago, the Shell has five new wells actually under way on this lease and it appears quite probable the first to be spudded in, No. 7 Cresson, will be tanking oil before the close of May. It will probably be another two or three weeks before any more wells are completed in this field, although No. 6 of the Miley-Mills interests may be finished from the shallow 3,100-foot level, which was passed up in the mad rush for deep production. Fred Roberts' No. 1 Butterworth, a recent completion in the Santa Fe Springs Field, is gradually building up and is being listed as a 150-bbl. pumper from 4,658 feet. Drilling operations in the Montebello Field have received only a casual mention due to the large amount of work being done in more prolific areas and the failure of producers in this district to show any exceptionally large production. There are at present seven active drilling projects under way at Montebello and it is believed one or more will be finished within two weeks. The St. Helens Petroleum has two drilling projects on the Monterey lease and another on the Mulholland property, while the Standard has two on the Baldwin lease and one on the Whitehead.

The Herndon & Hunter well in the eastern part of the East Coyote Hills Field has resulted in considerable speculation as a result of its recent spectacular blowout and final completion as a 300-bbl. flowing well from 4,155 feet. A minute study of the area is being made by several larger companies and some may undertake additional drilling on the strength of the showing. Several drillers in the Brea Olinda Field are nearing completion. The Brea Canyon Oil Co. has finished Nos. 40 and 41 and both are being prepared for immediate production. The Birch Oil Co. should also finish a new well soon. The Chanslor-Canfield Midway Oil Co. has abandoned its attempt to develop deep production in No. 96 Olinda after carrying it down to 8,201 feet and the hole will be plugged back for shallow production. The Richfield district is still the most active of the older areas due to the drilling operations of the Union, Standard, General Petroleum, Continental, California Petroleum, Associated and several others.

Goleta

E. J. Miley has just finished his second successful commercial producer in the recently discovered Goleta Field in Santa Barbara County and the action of this well indicates this field has greater potentialities. The well blew in just after the cement had been drilled out and, due to the unexpected gas pressure, it ran wild for a short time before being capped. It has been connected up to lease tanks and the first full 24-hour production test showed 750 bbls. It has since settled to 550 bbls. and is making about 2,000,000 feet of gas in addition. Miley's new well was No. 4 Tecolote, which came in barefooted from 1,456 feet, a string of 8¼-inch having previously been landed and cemented at 1,442 feet. The well is producing from 14 feet of sand, having just barely tapped the pay, and it is probable the present output could be tripled by some more hole. This oil is running approximately the same as that produced by the discovery well, which is averaging 43 degrees with a gasoline content of 60 per cent. The most interesting well is Miley's No. 1 Tecolote, which was cemented a few days ago at 3,126 feet. The importance of this test lies in the fact that it may have picked up a second sand which should be more prolific.

Ventura Avenue

Three new wells were finished in the Ventura Avenue Field, the largest being the Bolsa Chica Oil Co.'s No. 2 Hartman, which blew in doing 2,500 bbls. of oil and 2,000,000 feet of exceptionally wet gas daily from 6,602 feet. The completion automatically extended the northern limits about 300 feet and proved up several additional locations. The Associated's No. 45 Lloyd, drilled to 5,862 feet and finished with a 6¼-inch oil string, was given a production test the following day and it responded with 1,500 bbls. No. 12 Edison of the Shell, in the southern part of the field and about two locations northwest of No. 1 Orton of the Petroleum Securities, is being listed for completion at 6,183 feet. It started off flowing 550 bbls. daily but will probably build up after it has been on production a little longer. The Shell's next completion will probably be No. 18 Taylor, finished at 6,332 feet. The Petroleum Securities, operating in the extreme southern part, has four wells actually under way, two on the Willett lease and a like number on the Orton property. The General Petroleum is also running four strings of tools but it will probably be two or three weeks before any additional production can be anticipated. In the South Mountain Field, which, like the Ventura Avenue Field, is in Ventura County, the California Petroleum Corp. brought in a 450-bbl. producer in No. 21 Willard at 3,577 feet. This is one of the best wells finished in this district for more than a year.

Southern California Wildcats

The development in Southern California wildcat circles during the week was the action of the Associated in resuming work at Potrero, about midway between the Inglewood and Rosecrans Fields. The Associated's first test has been standing cemented in an untested oil sand at 4,450 feet since November. The company drilled out the plug a few days ago and, without making a test or engaging in any further work, operations were shifted to a new well which the company has located about one-half mile southeast. The Associated, instead of testing out its first wildcat, will apparently concentrate its efforts on the second test, as the company is not desirous of opening up a new field at this point. The California Eastern is stepping along with its second test northwest of the Associated's original wildcat. The fact that the California Eastern and General Petroleum failed to find the oil sand a mile southeast of the Associated's first wildcat leads many to believe the area to the northwest may prove productive. At any rate this section seems to be on the verge of another little boom.

The Standard is abandoning its No. 1 University, a wildcat in the San Fernando Valley, as a duster at 5,990 feet. Neither this hole nor the test of the Petroleum Securities, abandoned a few weeks ago, found any particularly favorable indications. The Shell is erecting a steel rig on the Mission property and will proceed regardless of past failures. This location is considered with some favor, as the Standard had one or two small shows in the two wells drilled in this section a few years ago. The Bandini district has just had another dry hole as a result of the action of the Petroleum Securities in abandoning its No. 1 DeBaker as a duster at 5,815 feet. This is but one of a series of dusters since the discovery of Santa Fe Springs back in 1921. George F. Getty is of the opinion that previous tests have not been located advantageously and he has taken a sublease from the Marland Oil Co. in Section 25-2-12 not far from the town of Rivera. He has erected a rig for No. 1 Tubbs approximately a mile west of Rivera and about a mile east of the Oak Ridge Oil Co.'s No. 1 Rossi, drilled and abandoned a few years ago. The Standard drilled a dry hole about a mile northeast of Getty's present test but it, like all others put down in this section, was abandoned as a dry hole. The Burbank Oil Co. drilled a wildcat about one-half mile southeast of Getty's present location and, although this company reported slight showings, they were not productive. It is the opinion that Getty's new well is one of the most likely-looking wildcats in Southern California and, since the acreage was geologized and tied up by the Marland Oil Co., discoverers of the Seal Beach Field, it might be well to watch this wildcat closely. It is reported that the Standard and California Petroleum Corp. have been active in the vicinity of Olive, but no one seems to know just who started the leasing activities and some doubt exists as to which is scheduled to test out the area.

Northern California Wildcats

The Pacific Eastern Oil Co. is drilling out the cement in its Bakersfield wildcat and a production test will be made soon. A fairly well-saturated sand is reported to have been picked up at approximately

(Continued on Page 105)

MALJAMAR AREA WELL PICKS UP PAY; INGLEFIELD BRIDGES RIG DESTROYED

By Special Correspondent

ARTESIA, N. Mex., Apr. 30.—Fire caused by friction from a back brake destroyed the rig of the Inglefield, Bridges' No. 1 State in Section 4-17-34. The well was being bailed at the time, having been standing with about 4,500 feet of oil in the hole. The only part of the equipment saved was the belt. A new rig has been ordered to the lease and the hole will be carried to a depth of 5,000 feet.

Another well to pick up a pay sand in the Maljamar area is the Henderson, Dexter, Blair, Inc.'s No. 1 Wyatt permit in the SW SW of Section 34-17-33 which is standing with 1,500 feet of oil in the 8¼-inch hole, this coming from 4,832-35 feet. The present depth is 4,870 feet in a gray lime. This test is 7½ miles southeast of the Maljamar discovery well and just west of the rim of the caprock. The Wyatt test was drilled by Henderson, Dexter, Blair as a joint test with the Texas Production Co. to a depth of 4,500 feet. A division of the acreage was then made, with the California operators getting the well and approximately 25,000 acres. The next pay looked for is at 4,900 feet.

Instead of getting oil the Ohio Oil Co. drilled into an ocean of water in its No. 1 Marland test on the Workman permit in Section 13-22-29, at a depth of 3,212 feet. It has not been decided whether casing will be run and the well deepened or to stop at the present depth.

The Texas Company has succeeded in getting a hold on a string of lost tools in No. 1 Robinson permit well in Section 25-16-31 which was buried under cavings at a depth of 780 feet. Failure of a drilling engine to function during a sand storm caused most of the trouble, the crew being unable to get the tools from the hole after two days' fishing. Contractors familiar with the New Mexican climate usually shut the rig down and cover up gas or gasoline engines during one of the local "rain storms."

The Maljamar Oil & Gas Corp. has decided to deepen the No. 1 State well in Section 16-17-32 as it is convinced the lower pay has not been reached. This well has been producing only 45 bbls. daily.

The Cap Rock Oil & Gas Corp.'s No. 1 Leonard, Levers well in Section 11-16-32 is drilling in anhydrite at a depth of 2,775 feet. Another California company to enter the Maljamar area is the Apache Oil Co., which has taken over the holdings of Bruce Sullivan and will complete his No. 1 Lodewick permit well in Section 1-18-31. This well has been shut down for five months at a depth of 2,650 feet.

Roosevelt County, in the east central part of the state, is now coming in for its share of leasing. The Amerada corporation has done most of the buying with the Humble company and some other of the majors getting protection. It is reported that considerable work has been done with magnetometers.

DRILLING REPORT

Eddy County

Clark & Grimm's No. 1 Daugherty, NE SW Section 3-17-27, making 1,000,000 feet of gas; Compton's No. 3 Mann permit, SE Section 3-18-27, shut down at 400 feet; Compton No. 2 State, NW Section 2-18-27, shut down at 1,575 feet; Danciger. Oil & Refining Co.'s No. 1, SE SW, Section 24-17-27, moving rig; Empire Gas & Fuel Co.'s No. 1-B Russell, SE NE, Section 34-17-27, drilling at 1,725 feet; Hamilton Petroleum Co.'s No. 1 Billings, Section 12-19-26, shut down; Henderson, Dexter & Blair, Inc.'s No. 1 State, NW NW, Section 9-19-28, drilling below 2,525 feet; Kelly's No. 1 Berry permit, NW NW, Section 27-17-27, shut down to install heavier rig; Lacka-

(Continued on Page 105)

Considering Size (space required) and weight METRICS are the largest capacity iron meters available for Gas measurement

They are unmatched in their advantages for industrial installations

A METRIC will measure as much gas as from 2 to 4 meters of the types formerly installed for industrial customers. By reducing the number of meters required they also reduce the cost of installation and of readings.

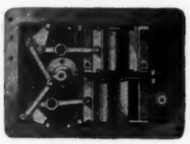
The entire installation is simplified. Space is conserved to the limit because their compactness means they take less room to do a given amount of work than is required by any other iron cased gas measuring device.

They are rugged to an extent that makes them absolutely safe at their capacity pressures and provides an adequate safety factor against failure from pressures that might build up due to obstructions in the outlet lines.

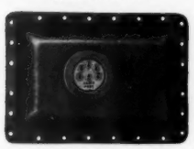
They are being used to handle jobs that previously depended upon meters twice as large and twice as expensive. From the very beginning they are the most economical meter for their purpose and they will do what no similar apparatus can do.

Sectional view showing position of adjusting wrench by entrance through hand hole plate.

Showing accessible position of adjusting screws. Adjustments are made here for equalizing check and full flow tests and for lengthening or shortening of both diaphragms.



Top view showing Valve Table with valve and arm construction.



Top showing index. Meters for varying pressures have the vertical index with Volume and Pressure Recording Gauge.

In their construction and operation they are modern in every respect

METRICS are built of the best; in their every detail they are furnished with the quality that is traditional in Metric Meters.

Bearings, links and arms are all made of a special metal which is prepared entirely in Metric foundries from a formula which has proved to produce the best slow speed bearing material known in meter construction.

All inlets and outlets are for 4" standard threaded connections. Installation is simple—no special connections required.

Operation is positive and, in essentials, follows the same general principles as have proved reliable for years in Metric Ironcase and Tin Meters. Adjustments are easily made. High pressure Metrics are always tapped for volume and pressure recording gauges, and furnished with vertical indexes.

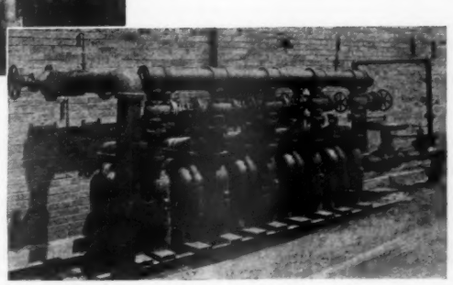
In the above installation three Metrics are measuring the gas at low pressure which is then boosted by the blower to 2 lbs. as required at the burner of this enamel baking kiln of the Jewett Refrigerator Company.

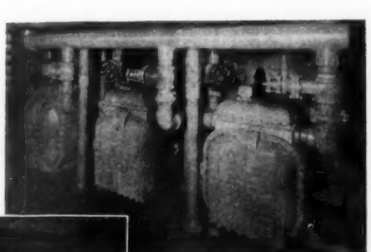
To the right a battery of Metrics belonging to the Tyler Gas Service Company, installed at the shops of St. Louis Southwestern Railway at Tyler, Texas.

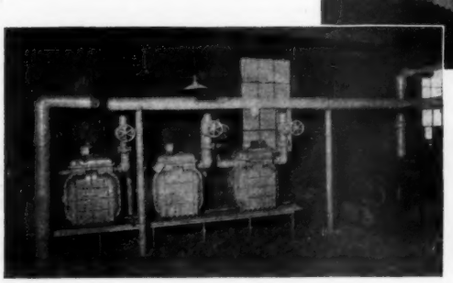
METRIC METAL WORKS

of the American Meter Company-Inc.

ERIE - PENNSYLVANIA - U-S-A







Above are three Metrics installed at the Buffalo Pottery plant and having a total hourly capacity of 22,500 cu. ft.

The three Metrics to the left have the same total capacity as the above installation. They are measuring large volumes of gas used in the plant of an industrial consumer.

0 cubic ft. per hour at 2 in. loss through the meter

Guernsey County Leads in New Work

Jackson Township Most Active. Eastern Operators Attracted by Chance for Gas Even If Disappointed in Oil

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., May 2.—Very little has occurred in the eastern fields since last reviewed. A few more wells were completed and the new production is less. The only fair producers completed are located in the deep sand territory in southeast Ohio.

Operators are not inclined to start any new work, except where it is absolutely necessary. There is an absence of new pools and the old territory not fully developed can wait until general conditions improve. Producers are keeping their old wells running and at the present market price of crude many are not more than paying expenses. The outlook is not promising for the near future. Reports from many districts show that no new work is under way or starting. Guernsey County, Ohio, has the most new work of any section in the East. Jackson Township is leading all others in this county. Failure to get an oil producer may result in a good gasser, which is more profitable than a small oil well.

Best Producers for the Week

The week of development work was not featured by only a very few wells better than the average size. In the deep sand territory in southeast Ohio, located in the northwest quarter of Section 12, Washington Township, Hocking County, the Preston Oil Co. completed in the Clinton sand a test on the Cynthia Marks farm. It produced 115 bbls. after shot.

West Virginia completed but two fair wells. In Geary district, Roane County, the South Penn Oil Co. completed No. 54 on the O. D. Stockly farm and got a natural producer good for 40 bbls. a day. This location is north of the same company's production on the same farm in Henry district, Clay County. In Elk district, Kanawha County the Virginian Gasoline & Oil Co. has a 35-bbl. producer at No. 17 on the J. F. Brown farm.

At the close of the week very few completions were reported and the best very light pumpers or gas wells.

On the Ohio side in Section 25, Liberty Township, Washington County, Huntsman & Co. completed No. 6 on the Romier-Erbes farm. It is a duster in the second Cow Run sand. In Section 24, Alexander Township, Athens County, Cook and others have a very light pumper in the Berea grit at a test on the C. P. Riley farm.

West Virginia

On the North Fork of Hughes River, Grant district, Ritchie County, T. A. & E. P. Mellon have completed in the Berea grit a second test on the C. A. Kearns farm. It is a gasser good for 500,000 feet. In McKim district, Pleasants County, Howard Hall and others are drilling a test on the L. M. Miravle farm.

On Walnut Creek, Elk district, Kanawha County, the Virginian Oil & Gasoline Co. has put No. 17 on the J. F. Brown farm, completed last week, to pumping and has been averaging 35 bbls. a day.

On Seaman Fork of Reedy Creek, in Reedy district, Roane County, the Heck Oil Co. has completed and shot in the Berea grit No. 5 on the J. W. Conley farm. It is located 600 feet northwest of No. 3 and good for 10 bbls. a day.

Ritchie County

On Spring Run, Grant district, Ritchie County, Romeo G. Wiles is rigging up on the West Virginia tract. On McFarlan Creek, Murphy district, the South Penn Oil Co. is spudding in No. 6 on the Anna M. Wilson farm. In DeKalb district, Gilmer County, S. G. Roberts & Co. have a rig up on the Dosia Bell farm. In the same district, the South Penn Oil Co. has a rig up on the D. S. Holbert farm. In Grant district, Ritchie County, the Junior Oil Co. is drilling in the sand at a test on the Heckman heirs' farm.

In Sherman district, Boone County, the Pure Oil Co. has completed in the Berea grit No. 231 on the Williams Coal Co. tract good for 35 bbls. a day. The same company is drilling Nos. 8, 9, 11, 19 and 20 on the Federal Coal Co.'s tract. No. 28 on the Lafollette, Robson & Prichard tract is due in the sand.

In Crook district, Boone County, the Owens Bottle & Machine Co. has a gasser at a second test on the U. S. Anderson farm. In the same district, Godfrey L. Cabot has a gasser at a second test on the E. M. Arbogast farm. The United Fuel Gas Co. has a fair gasser on the Horse Creek Coal & Land Co.'s tract. In Sherman district, Godfrey L. Cabot has a gasser good for 1,300,000 feet at No. 17 on the Federal Coal Co.'s tract. In Church district, Wetzel County, the Cameron Oil & Gas Trust Co. has a gasser in the Big Injun sand at a test on the Earl Hennan farm. Walter Null is due in the sand at a second test on the Thomas Phillips farm.

Monongalia County

In Clay district, Monongalia County, the South Penn Oil Co. is building the rig over No. 3 on the George Tennant farm, preparatory to drilling it to the lower sands. In Battelle district, D. W. Null's test on the Dawson heirs farm is dry in all sands. In the same district, the Maxon Oil Co. and Bell Brothers are tests on the A. W. Whistler and John Liming farms. On Triplett Run, Spencer district, Roane County, Godfrey L. Cabot has drilled his test on the A. J. Runion farm through the Big Injun sand. It was shot but failed to respond and is being plugged and abandoned.

On Jakes Run, Clay district, Monongalia County, the South Penn Oil Co. has completed in the Bayard sand No. 5 on the Presley Tennant farm. It is a small gasser in that formation at a total depth of 3,050 feet. In Walker district, Wood County, the Hope Construction & Refining Co. has drilled its test on the Roberts heirs' farm through the Gordon sand and dry. In McElroy district, Tyler County, J. H. Penz has a light pumper in the Big Injun sand at a test on the Kyle heirs' farm.

In Union district, Lincoln County, the Huntington Development Co. has completed No. 293 on the G. F. Porter farm. It is a gasser in the Berea grit. In Big Sandy district, Kanawha County, the United Carbon Co. has a 15-bbl. pumper at No. 7 on the Kennedy heirs' farm. In Elk district, the Oakland Development Co. is drilling a test on the J. H. Cooper farm.

Pleasants County

In Union district, Pleasants County, Samiel & Gale have completed No. 15 on the Gale heirs' farm. It is a very light pumper. In Mannington district, Marion County, S. N. Elliott's second test on the L. R. Metz farm, dry. In Battelle district, Monongalia County, the Manufacturers Light & Heat Co.'s second test on the Delaney heirs' farm is a gasser in the Bayard sand. The same company is drilling a second test on the Simon Youst farm.

In Murphy district, Ritchie County, J. F. Deem & Co. have completed in the Maxon sand a second test on the James Tingler farm. It is a gasser good for 1,500,000 feet. In the same district, the Hope Natural Gas Co. completed a test on the W. B. Cunning farm. It is also a gasser in the same formation.

The Carnegie Natural Gas Co. has completed in the stray sand a test on the J. L. Arnett farm, in Mannington district, Marion County. It is a light gasser. In Ten-Mile district, Harrison County, the Aizpurin Oil Co.'s test on the P. Dolan farm is dry in all sands and has been abandoned.

Lincoln County

In Carroll district, Lincoln County, C. C. Wolfe's second test on the M. M. Samuel heirs' farm is a gasser in the Berea grit. In the same district, Meabon & Huffman have a gasser in the same formation at No. 7 on the Charles Gillenwater farm.

In Clay district, Wetzel County, the Hope Natural Gas Co. has drilled deeper its No. 1 on the J. C. Burch farm, good for 2 bbls. a day in the fifth sand.

Boone County

In Sherman district, Boone County, the Pure Oil Co. has completed No. 229 on the Williams Coal Co.'s tract and it is a gasser in the Berea grit. The same company's Nos. 9 and 19 on the Federal Coal Co.'s tract are both gassers.

In Grant district, Pleasants County, L. P. Bickel & Son have completed in the Berea grit No. 4 on the A. V. Hammett farm good for about 5 bbls. a day. In Smithfield district, Roane County, the United Fuel Gas Co.'s No. 3 on the A. Lewis farm is a gasser in the Big Injun sand good for 500,000 feet. In Spencer district, G. L. Cabot's test on the A. J. Runnion farm is dry in the Big Injun sand.

In Geary district, Roane County, 1,400 feet north of the South Penn Oil Co.'s No. 50, on the O. D. Stockly farm, in Henry district, Clay County, the same company has completed No. 54 on the same farm. It is a natural producer in the Big Injun sand good for 40 bbls. a day. Operations in Henry district, Clay County, have declined and very little new work starting. The old wells, however, are holding up very creditably.

Small Gasser in Upshur County

In Meade district, Upshur County, Taylor & Cavender have completed in the Maxon sand a test on the E. W. McCue farm. It is a light gasser. For the present this completion brings development work in Upshur County to a close. No other wells are starting or drilling. On McFarlan Creek, Murphy district, Ritchie County, J. F. Deem and others have completed a second test on the Jacob Tingler farm. It is a gasser in the Maxon sand, good for 500,000 feet.

Duster and Light Pumper in Wood

On Plum Run, Williams district, Wood County, F. G. Mixer & Co. have completed in the First Cow Run sand a second test on the C. W. Dowling farm. It is a duster. In the same locality, C. S., D. H. and J. W. Reed have completed No. 3 on the C. S. Reed farm, showing for a very light pumper in the same formation.

Drilling Tests

In Mannington district, Marion County, Jesse Nason is due in the sand at a test on the D. F. Yost farm. In Grant district, Ritchie County, the Mellon Oil Co. is drilling a second test on the C. A. Carnes farm. In Murphy district Capt. Davis & Co. have skidded the rig and started a new hole at a second test on the Asa W. Flesher farm. In the same district, J. F. Deem & Co. are due in the Maxon sand at a second test on

(Continued on Page 72)

THREE DRY IN SAGINAW SAND; SLIGHT SHOWING IN THE DUNDEE

By Whit
Staff Correspondent, Michigan Fields

SAGINAW, Mich., Apr. 29.—The Saginaw sand proposition in the Saginaw Field got a hard bump during the past several days, there being three dry holes out of four wells finished in that formation, and it now looks as though pays from that formation lies in pools and not as dependable as is the Berea sand. When the Sun Oil Co. brought in its deep Saginaw sand well on the Ferdinand Stelzreide farm, to the north end of the field, it looked very encouraging for the development of a nice field from that formation, especially in the north end, and when the Western Drilling Oil Corp. drilled in a well on the Mrs. Augusta Labuda property at Oak and Eddy Streets that bailed 70 bbls. from the deep sand, and about 1½ miles southeast of the Stelzreide farm gusher, it looked as though a big Saginaw sand area was a certainty. This theory was knocked in the head when the Saginaw Prospecting Co. drilled its Berea sand well on the George Griebel property, along the Shattuck Road, west of Hermansau Road and midway between the Stelzreide and Labuda wells, and failed to find any signs of oil. It set the trade to thinking that the field would prove a spotted one so far as getting production from the sand that had looked so promising. The Griebel well is right in the heart of the Berea Pool, as is the Labuda well.

Off to the northwest of the field, where some fair Berea sand wells have been found, the Ohio Fuel Corp. drilled its No. 4 on the Fisher farm, Section 10, Saginaw Township, through the Saginaw, failing to get a producer. Then followed the well of the Sun Oil Co. on the Rabe farm, not far from the Stelzreide well, which looks like a duster in the Saginaw sand. Another Saginaw sand well that proved a duster is on the Fred Engle farm, to the west of the field proper, although there is a Berea sand well on the same farm.

When the Stelzreide well was brought in for a production around 475 bbls. by the Sun Oil Co., oil men flocked to the scene, and when the Labuda well came in there was considerable speculation as to how much territory the new well proves up. It has been thought by many that the Saginaw sand is spotty and that the good wells might be isolated, with dry or only slightly productive spots between and such has proven the case, and was settled by the three dry holes mentioned.

Showing in Dundee Sand

A slight showing of oil and gas in the Dundee sand close to 600 feet below the Saginaw sand is reported in the J. & S. Development Co.'s well on the John Sliva property at Deindorfer and Charles Streets, but the well is shut down and results must come later.

Saginaw Sand Wells

The Saginaw Prospecting Co.'s No. 1 George Griebel property, on the Shattuck Road, west of Mermansau Road, which drilled 27 feet into the Saginaw sand, failing to get a showing, will plug back to the Berea sand, where the well was

(Continued on Page 95)

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Gibson County, Ind., Has 150-Bbl. Well

Lawrence County, Illinois, Producer Makes 100 Bbls. Initial. Morgan County Has Promise of Making New Field

By Whit
Staff Correspondent. Central West Fields

FINDLAY, Ohio, Apr. 30.—The Central West Field, comprising central and northwestern Ohio, Indiana and Illinois, report the completion of 35 wells, in the week's figures, of which 14 were dry, 8 gas wells, and an initial production of 375 bbls., which means that the majority of the oil producers were of the stripper order. The outstanding producer for the week was uncovered in southwestern Indiana, when the Euclid Oil Co.'s No. 4, on the Veirling heirs' farm, Washington Township, Gibson County, came in at 150 bbls. initially, and the McCloskey sand well of the Ohio Oil Co., on the W. E. Robbins No. 2 farm, Dennison Township, Lawrence County, Illinois, produced an initial of 100 bbls., the two wells accounting for the greater amount of the entire new production of 375 bbls.

A find of interest is a gas well showing 2,000,000 feet at a shallow depth of 435 feet on the Willerton farm, Section 18, Jacksonville Township, Morgan County, Illinois, and in the same section, a 250,000-foot well was found at 304 feet. A showing of oil was found in No. 4 well on the O. F. Conklin farm, same section at 304 feet, but not in commercial quantities. This information was received through the Illinois state geologist and the belief is that prospects are good for the opening of a shallow field in that county.

Numerous wildcat tests are under way in both Indiana and Illinois scattered over a large area. Many of these tests are being watched with much interest, especially in the shallow sand areas where the cost of operations is small, as operators appear to prefer the shallow territory for development during the low price of crude.

Lima Field

The best completion reported from the old Lima Field of northwestern Ohio for the week was a 30-bbl. initial producer drilled by the Hardin Oil & Gas Co., in No. 9 on the A. R. Zimmerman farm, in the Roundhead Field of McDonel Township, Hardin County, and the most southerly point of development in the Trenton Rock area at this time. In the same field, H. E. Schmidt is drilling No. 5 on the Earl Hites farm. No. 4, on this lease, had an initial of 25 bbls.

The Ohio Oil Co.'s test, in the northwest corner of the Louis Paur farm, NW, Section 2, Laramie Township, Shelby County, showed an initial of 12 bbls. Top of sand was at 1,239 feet and drilled 180 feet in the sand to a total depth of 1,419 feet. In Cynthian Township, same county, the Wittmore Oil & Gas Co. is drilling No. 3 on the Mart Zimmerman farm, Section 15, and the Eilerman Oil Co. is drilling No. 2 N. A. Paulus farm, Section 34.

Little work is now being done in the old Wood County Field. In Middleton Township, near Haskins, George L. Haubert and others are drilling No. 5 on the Fred Geldin, Jr., farm, Section 21. Charles F. Zeising and others are working at No. 2 on the Otto Brim farm, Section 27, Lake Township. In Liberty Township, Hulse and Kundtz, Cleveland operators, are drilling No. 2 on the E. A. Judson farm, Section 3, and in the same township, the Ohio Oil Co. has pulled out and abandoned old Nos. 9, 10, 14, 23 and 24 on the Lehman Brothers farm, Section 1.

Near Findlay, in Liberty Township, Hancock County, Stitt and Sawyers' No. 7, in the southeast corner of the William Sawyer farm, better known as the Findlay Pressed Brick Co. property, NW, Section 13, topped the sand at 1,248 feet and drilled 192 feet in the sand, the well having an initial production of 15 bbls.

In Sugar Creek Township, Allen County, James M. Jacobs is drilling No. 8 on the J. H. Jacobs farm, Section 1. In Marion Township, the Ohio Oil Co. abandoned No. 3 on the George W. Dilsaver farm, and Nos. 3 and 8 on the Joseph Loman farm, both in Section 15. In Spencer Township, it did the same with No. 2 on the Joseph Hamhorst farm, Section 13. In Amanda Township, the same company also pulled out Nos. 6 and 8 on the A. B. Moorman farm, Section 29, and Mack P. Colt abandoned Nos. 4 and 5 Sawmiller farm, Section 31. E. A. Peavey is starting No. 8 on the Samuel H. Vore farm, Section 12, Bath Township.

Mercer County

In Butler Township, Mercer County, L. J. Lantz drilled in his third well 1,000 feet from the south line and 500 feet from the west line of the William Miley farm, NW, Section 19. Sand was struck at 1,112 feet and at 50 feet in the sand showed an initial of 5 bbls.

In Union Township, Marcus Rosenthal abandoned Nos. 1 and 3 on the S. H. and Julia Jones farm, Section 36, and Stelzer & McClure did the same with No. 8 on the Summer & Drake farm, Section 8.

In Recovery Township, A. W. Neely and others are drilling No. 8 on the H. J. Stackler farm, Section 25, and in Hopewell Township, T. G. Ayres is drilling No. 2 S. and J. Hoenie farm, Section 26.

Auglaize County

In Washington Township, Auglaize County, Grover Lynch and others' test, 1,320 feet from the north line and 200 feet from the east line of the William Wibber farm, NW, Section 9, topped the sand at 1,169 feet and at 50 feet in the sand, pronounced the well a dry hole. Campbell and others got one of the same kind in a test, 400 feet from the south line and 800 feet from the east line of the John Kogge farm, SW, Section 4, same township. Top of sand in this well was found at 1,170 feet and drilled 50 feet in the sand.

In Noble Township, Charley Mertz abandoned Nos. 1, 2, 3, 4, 6 and 7 on the Francis J. Ruby farm, Section 27, and in Logan Township the Pleasant Valley Oil Co. pulled out. Nos. 7, 8, 11 and 12 on the Joel Alspaugh farm, Section 24.

In Douchouquet Township, the Vossler Oil Co. is drilling No. 5 on the Charles Vossler farm, Section 16. H. F. Kelly and others are drilling a test on the M. Kelly farm, Section 7, Moulton Township.

Other Developments

In Woodville Township, Sandusky County, the Ohio Oil Co.'s No. 1, in the northeast corner of the F. Dischinger farm, NE, Section 25, found top of sand at 1,247 feet and at 100 feet in the sand showed an initial of 6 bbls. No. 2 is drilling. Milton J. Beaty is drilling No. 15 on the W. A. Heyman farm, Section 3, Jackson Township. In Washington Township, same county, the Ohio Oil Co. abandoned No. 5 on the George W. Grant farm, Section 19, and in Madison Township, L. P. Neiset did the same with No. 1 on the Sampsel farm, Section 24.

The Ohio Oil Co. is drilling No. 47 on the Gertrude J. Niles farm, in Section 29, Oregon Township, Lucas County, and south of Maumee Bay.

Payne Field

An interesting gas and oil development is under way in the Payne Field, in Paulding County, after lying dormant for more than a year. The F. Thomas Knerr interests is now drilling a well on the J. M. Henry 60-acre farm, Section 17, Benton Township, about 3 miles southwest of Payne; about 800 feet southeast of the gas well on the Finan farm and about a quarter of a mile due south of the Burkhold gas well. The Henry farm drilling well being along the west line of the farm.

F. Thomas Knerr, until recently cashier of the Farmers & Citizens Bank of Payne, has resigned his position and entered oil and gas development. The program calls for four wells to be drilled on acreage on the east side of the known gas structure which has a thickness of 26 feet, which is all gas pay sand in both the Finan and Burkhold wells, with the prediction that the apex of the structure has not been reached. The Knerr test is expected to bring the surprise production of the Payne Field, according to its location. Those who have made a study of the Payne Field predict that the Knerr acreage will be found to have a still greater thickness of pay sand, and the east side of the structure should be very favorable for better oil production.

The Burkhold well has been putting gas into the Payne Natural Gas Co.'s line for the past year with only about 25 per cent of its production permitted to be produced. During January, this year, it put 1,600,000 feet of dry gas into the line, the production from the Finan well being about the same.

The outcome of the Knerr tests will determine if the town of Payne will succeed in getting the bottle factory which figures on locating in the town at a cost of $80,000 erected and ready to operate by October 1, this year, which will employ 60 or more people in the manufacture of brown bottles.

The Payne Natural Gas Co. has given Payne, Antwerp and Paulding consumers splendid service during the winter of 1926 and 1927 and has contracted for all the gas produced from the four wells to be drilled by Knerr and associates. The company has also planned to extend its system of distribution of natural gas from the Payne Field to Hicksville, Defiance and several other towns in northwestern Ohio; also New Haven, Ind., which is a suburb of Fort Wayne, where the company now holds a franchise, in addition to supplying the bottle plant at Payne with 250,000 cubic feet daily for the coming five years. The Payne Natural Gas Co. is owned by John T. Schenck of Chicago and C. E. Ledford, an old-time operator, now a resident of Payne.

Central Ohio

Eight completions, three dry holes, four gas wells and one oil well with an initial production of 12 bbls. in the week's report from the Central Ohio Field. There

(Continued on Page 102)

TENNESSEE WELL MAKES 250 BBLS.; DRILLING IN CLAY AND MACON

By Whit
Staff Correspondent, Kentucky-Tennessee

WINCHESTER, Ky., May 2.—Small wells were the result of the drill in all parts of Kentucky during the week, as the productive Ambrose Pool, in Ohio County, failed to bring forth any new completions in the gusher territory, while the Hawkins farm well along the Jackson-Clay County line in Tennessee, near the Lock Branch school, is reported showing for better than 250 bbls. initially. Several wells are due in Clay County and should add materially to the production of that county. Drilling wells near Boiling Springs in both Clay and Macon Counties are being watched and if commercial production is found will mean much for the territory between the present production near Celina in Clay County and the Scottsville Field of Allen County, in Kentucky. Weather conditions have improved to a great extent and there should be a revival of operations over both States.

Week's Work

A summary of the week's work in the Kentucky - Tennessee - Mississippi fields show 32 completions, 21 producers with an initial production of 393 bbls., 10 dry holes and 1 gas well. Compared with the previous week there were 11 more completions, 4 more producers, 708 bbls. less production, 6 more dry holes and 1 more gas well. These wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Estill	9	9	26	0	0
Barren	5	1	6	4	0
Johnson-Magoffin	3	3	40	0	0
Wayne	3	1	8	2	0
Ohio	2	2	38	0	0
Lee-Owsley	1	1	10	0	0
Warren	1	1	8	0	0
Wolfe	1	1	5	0	0
Morgan	1	1	2	0	0
Floyd-Knott	1	0	0	0	1
Cumberland	1	0	0	1	0
Kentucky	28	20	143	7	1
Tennessee, Clay County	2	1	250	1	0
Mississippi	2	0	0	2	0
Total	32	21	393	10	1
Last week	21	17	1,101	4	0
Difference	11	4	708	6	1

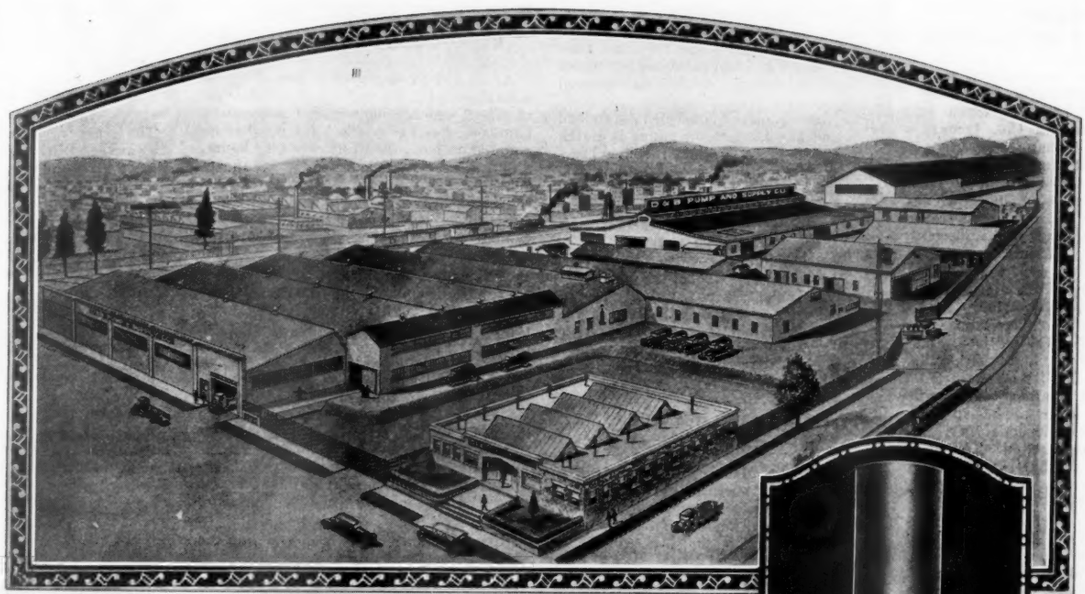
Eastern Kentucky

Estill County leads the eastern Kentucky division in completed wells and it requires only a short time to bring in a shallow producer in District 8, where the Superior Oil Corp., Wood Oil Co. and Brenner & Adams are drilling a large number of small producers. The Superior Oil Corp.'s Nos. 29 and 30, on the Simp Horn property, are good for 5 and 3 bbls., while Nos. 8, 9 and 10, on the Green Campbell property, are good for 2 bbls. each. Wood Oil Co.'s No. 1, Buck Ballard farm, is a 5-bbl. pumper and No. 16, on the William Neal farm, is a 3-bbl. pumper. Brenner & Adams' Nos. 3 and 5 Kate Sawyer farm, are both good for 2 bbls. each.

In Wayne County, District 2, the Somerset Oil Co.'s No. 1, on the H. C. Coffee farm, is a dry hole. In District 3, the Pigeon Rock Oil Co.'s No. 11, on the Stearns Lumber & Coal Co. land, is an 8-bbl. pumper. In District 5, Rex G. Carpenter, Monticello operator, got a dry hole at his No. 2 on the John Gregory farm.

In Johnson-Magoffin Counties, district 25, the Atlantic Oil Producing Co.'s No. 26, on the Gardner Blanton farm, is a 5-bbl. pumper. In District 31, Hupp, Duff and others' No. 1, on the Clay

(Continued on Page 124)



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CONTINENTAL

EQUIPMENT AND SUPPLIES

NEW TUBING STOP RECENTLY DEVELOPED

A new device for the protection of wells and the prevention of tubing accidents has recently been developed by the Dunn Manufacturing Co., Oxnard, Calif., designers and manufacturers of specialized equipment and tools for oil well operation.

This device, the Dunn super-safety tubing stop, is a radical departure from the conventional in tubing catcher design and construction, and presents many new features. The assembly does not require the use of bolts, screws, pins and cotters. Its method of construction, it is said, prevents the possibility of breakage, loss of parts and resulting fishing jobs, and provides in addition maximum strength, simplicity and dependability of operation.

The manufacturer claims the Dunn super-safety tubing stop to be as improved in safety and dependability, as it is different in construction. The slip actuator and component parts are located above the wedging cone. Fluid and gas pressure will not cause the gas to set. The wedging cone, slip actuator and slips are rotably connected. The four slips engage 80 per cent of the circumference of the casing. The upper and lower slip reins and guides insure perfect vertical alignment of all parts.

The bow spring tension against the casing is permanently in service and insures an instantaneous gravity differential between the action of the slips and the wedging cone, if the tubing should part. Should the tubing part, the bow springs are automatically forced outward at their lower ends by the spring actuated brake collar, positively checking the slip actuator and causing a quick, never-failing stop of the entire string of tubing.

The slips, it is said, cannot be telescoped by the cone, a hazard which causes much damaged and protracted fishing jobs. The gripping teeth of the slips are slightly angular, and set or release without damage. This feature, in connection with the large metal to metal surfaces between the metal and the cone, eliminates any possibility of sticking. It may be run in the hole as rapidly as desired, without the slips setting.

W. S. HOVEY ELECTED FAIRBANKS-MORSE HEAD

At an annual meeting of the directors of Fairbanks, Morse & Co., W. S. Hovey was elected president, the former president, C. H. Morse, becoming chairman of the board. This is the first time this position has been held by a man not of the original Morse family.

Born in 1875, a graduate of Cornell, Mr. Hovey joined the Sheffield Car Co., an affiliation of Fairbanks-Morse, in 1902, as assistant superintendent. Later he became superintendent, which position he held until 1913, when he was transferred to the Beloit works of Fairbanks-Morse as manager of the engine division. A few months later saw him general manager of that plant.

In 1919, Mr. Hovey was elected vice president in charge of all the manufacturing activities of Fairbanks-Morse and in 1924, was made general manager of the entire business.

His elevation to the presidency brings a man to the helm of this company who has worked his way up through the ranks. His thorough grasp of all factors of this widely extended business makes him, in the opinion of his associates, well suited for the new office. He will remain general manager.

NEW WIDE TRACK CRAWLER

The Belle City Manufacturing Co. of Racine, Wis., has just put into production a wide track crawler for Fordson as a companion to their narrow track which has been in successful use for some time both at home and abroad working under the various difficult conditions required of this type of tractive power.

The new model is styled standard gauge and like the narrow gauge is clutch controlled, has full Timken roller bearing equipment, Alemite-Zerk oiling system, drop forged treads and saw steel clutch discs running in oil.

MOVING WAREHOUSE

B. V. Emery & Co., Inc., have moved their warehouse from 124 West Third Street to 216 East Brady Street, Tulsa, Okla., where they plan to carry larger stocks of cordage and pumping equipment, Ascoloy (Allegheny Steel Co.) and Merco-Nordstrom valves.

TO VISIT ST. LOUIS PLANT

Clyde Ellwood, general sales manager of the Axelson Machine Co., was called to New York on business, and during his trip will visit the St. Louis plant of the company and make a flying trip through various oil field in the Mid-Continent, Rocky Mountains and the East.

WELFARE ACTIVITIES FOR AXELSON EMPLOYES

As an aid to employes in becoming familiarized with the rules and regulations of the Axelson company, an interesting handbook has been issued for circulation among the men, detailing working hours, absence, safety, sick benefits, group insurance, welfare, etc. It also embodies the constitution of the Axelson Welfare Association, comprised of employes of the company.

Speaking of the welfare activities, J. C. Axelson, president and general manager of the company, reports that the insurance plan instituted by the company some time ago has been well received by the employes. Each employe is protected with a life policy in the sum of $1,000, and after three years this is increased to $1,250, and after six years to $1,500. If the employe leaves, arrangements can be made to continue the insurance. Additional policies also provide for permanent disability and sickness, and these benefits are in addition to any that might be received under the workmen's compensation laws.

Special attention has been given by the directors in recognition of the merits of employes, and it has been the policy, according to Mr. Axelson, to choose, wherever possible, from the ranks for higher positions.

SHIPPING CONTAINER

The Geuder, Paeschke & Frey Co. of Milwaukee, Wis., has just placed on the market a shipping container which it believes has many advantages for shippers of greases and similar products. The pail has straight sides with a gentle inward slope beginning a short distance below the top. Since the top does not protrude beyond the sides any blow or

shock is taken by the body of the pail and not transmitted to the cover. An important advantage of this pail is that one can be stacked directly on top of another with the sides of adjacent columns touching. No "staggering" or "offsetting" to secure a "steady" stack is necessary. From the shipper's standpoint a direct saving is made by the greater number of these containers that can be shipped per car and the eliminating of blocking necessary to secure a nonshifting load.

TRADE LITERATURE RECEIVED

From Armstrong Brothers Tool Co., Chicago, a folder describing that concern's wrench set No. 26 recently placed on the market. The set is composed of six wrenches put out in a leatheret roll. The set combines openings for five United States standard nuts; eight S. A. E. nuts, and eight hexagonal cap screws. The wrenches are drop forged from special chrome-vanadium steel, heat treated and finished in nickel over copper.

From the Homestead Valve Co., Homestead, Pa., a folder describing the Homestead-Ross shut-off valve. The makers report this valve has been exceptionally serviceable on air pressures on account of certain mechanical features which eliminate leaks.

From the New York Edison Co., New York City, a booklet describing the new East River generating station of that concern. This station is unusually large and supplies a 25-cycle current at 11,400 volts to the Edison system and also provides means of tying in the Edison 25-cycle system with the United Electric Light & Power Co. and the Brooklyn Edison Co.'s 60-cylce systems through large frequency changers.

From the International Harvester Co., Chicago, the current number of Harvester World.

From the Foamite-Childs Corp., New York City, the current issue of the Industrial Fire Chief.

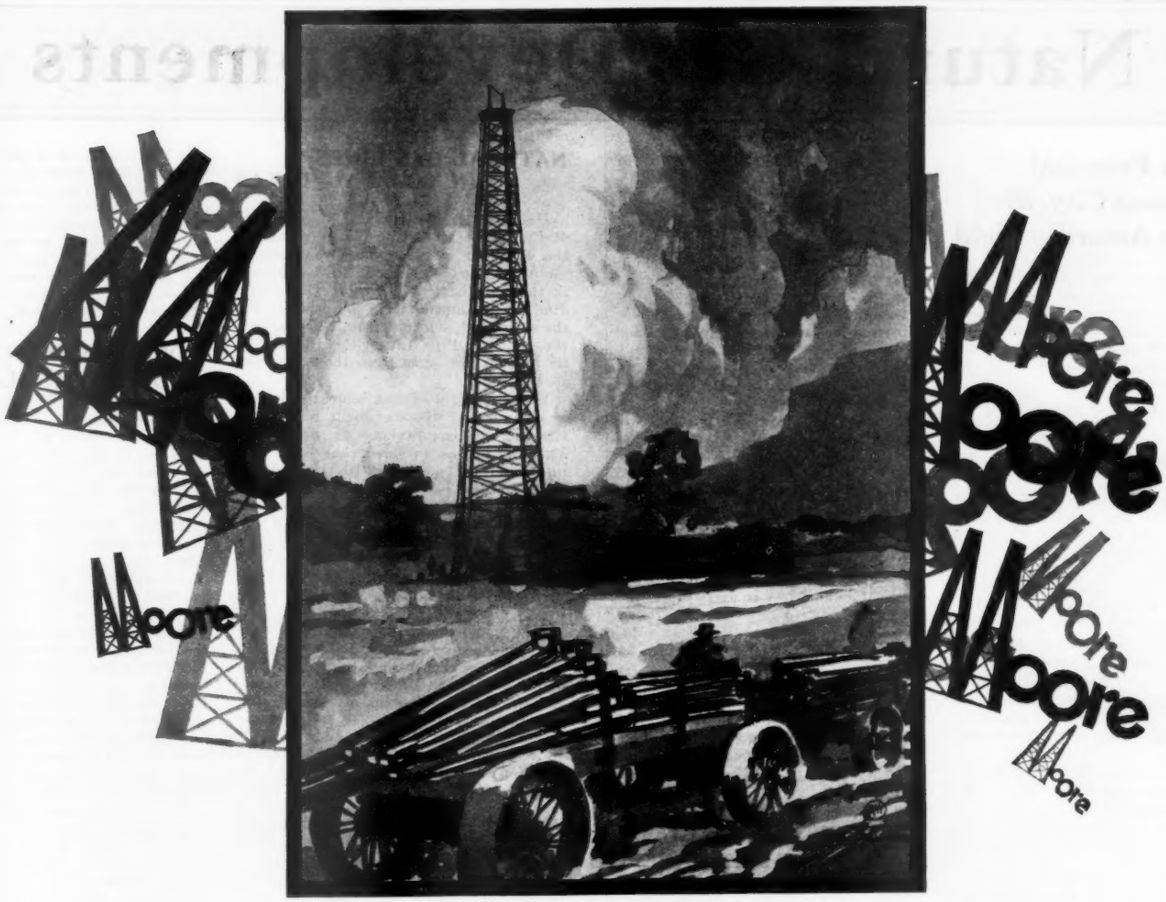
LARGEST TIMKEN BEARING EVER BUILT

The largest bearings ever built by the Timken Roller Bearing Co. has just been completed and shipped, according to officials of the company. These bearings have a bore of 42 inches and an outside diameter of 61 9/16 inches. At 30 revolutions per minute these bearings have a capacity of 2,750,000 pounds. The weight of each bearing is more than 2 tons.

Not only are these bearings the largest ever built in the Timken plant, but they will be installed by the Allis-Chalmers Manufacturing Co. in the largest compeb mill in the world. This mill will be put in service in a plant manufacturing portland cement. This mill has a diameter of 10 by 9 feet by 45 feet long and is used to take the clinker from the cement kiln and grinding it to finished cement in one machine.

The advantages of the Timken bearing in this machine will be the material reduction of the overall length of the machine, since the width of the Timken bearings is only 13¼ inches. Likewise, Timken bearings may be adequately enclosed, which will obviate the necessity of renewing the lubricant supply except at infrequent intervals. The tapered construction of the bearing permits, it is said, the carrying of all loads, regardless of direction without the use of thrust plates or special thrust bearings.

Bearings of unusual size and large capacity have been built for some time in the Timken plant and are used in many applications in steel mills and other types of equipment where shafts of unusual size and loads of exceptional magnitude require bearings capable of withstanding the service for long periods without renewal.



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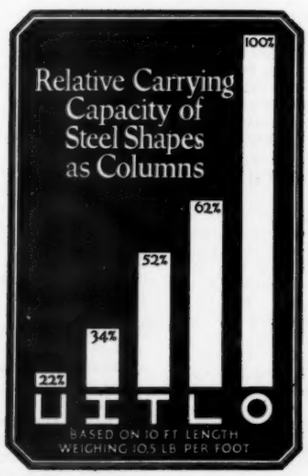

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Natural Gas Developments

First Gas Proposal For Kansas City, Mo., From Amarillo Field

KANSAS CITY, Mo., Apr. 30.—The first proposal in writing to supply Kansas City with industrial gas was made to the gas committee of the council by the Citizens Industrial Gas Co. of Kansas City. The proposal was made in the names of these men:

Victor A. Hayes, vice president of the Union Gas Co. of Independence, Kans.

George F. Coomber, Kansas City, a realtor and now a member of the city plan commission.

Dan C. Hayne, Kansas City, former chief engineer of the Kansas City and the Wyandotte Gas companies, now with Arthur L. Mullergren, consulting engineer.

John L. Knorpp, president of the Southwest Oil & Development Co., Los Angeles, but formerly of Kansas City.

Ben C. Moss, combustion engineer, Kansas City, former purchasing agent for old Metropolitan Street Railway Co.

Horace Wright, Winfield, Kans., representing the Land Owners' Development Co. of Amarillo, Tex., and investment bankers.

The letter, submitted by Sam B. Strother, attorney, to Judge H. F. McElroy, city manager, follows:

"As attorneys for the Citizens Industrial Gas Co., composed of the following gentlemen:

"Victor A. Hayes, George F. Coomber, Dan C. Hayne, John L. Knorpp, Ben C. Moss and Horace Wright, who own, and represent the owners of, extensive gas lands in the Panhandle of Texas, I make the following proposition to furnish industrial natural gas to Kansas City, Mo.

"We will furnish Kansas City natural gas of 286,000,000 cubic feet daily, at a rate of from 15 to 33 cents, a 1,000 feet, depending upon the amount taken by the customer, if you will give us a franchise for industrial gas, and will agree to begin construction of a pipe line and finish same as soon as possible after the franchise has been granted. We propose to have several crews working along at different points of this pipe line in order to have it completed at an early date.

"These men are in touch with sound financial investment bankers who will guarantee their undertakings. They represent the fee owners of land in excess of 500,000 acres of proven gas producing territory in the Panhandle country.

"This gas is what is known as sweet gas and is not a by-product, nor a waste product, of oil development.

"Due to the fact these people own their land in fee and are not lessees, they are able to conserve the gas for the benefit of their purchasers for a long period of years, and will not be compelled to exhaust the field, as under the usual lessee's contract, which requires full development and offset wells, the natural result being to exhaust the field from two to five years.

"This gas field has been completely surveyed and analyzed by responsible geological engineers and has been pronounced by them as capable of producing upwards of 1,000,000,000 feet a day the next 25 to 50 years.

"We have prepared and will submit an application for a franchise from Kansas City and will furnish such other information as you may desire.

"From my investigation, I feel sure these men will be able to carry out any terms of agreement that may be entered into with the city, and will be able to deliver industrial fuel to Kansas City away below the present cost, as well as relieve the city from the present smoke nuisance.

"SAM B. STROTHER."

Mr. Wright told the committee the company, which has been organized but not yet incorporated, had at present 1,200,000,000 feet of gas daily, open flow. It was not the purpose to supply Kansas City only, but to deliver gas to other cities on the way from Texas. He said that was necessary to pay out on the investment of $40,000,000 in the pipe line from Texas, booster stations every 35 miles and about 25 miles of pipe for industrial gas in Kansas City. In reply to questions, he said the company would not attempt to supply gas for domestic use to homes, but would sell it wholesale to the Kansas City Gas Co. for that purpose.

The rates for industrial gas were given by Mr. Hayne as follows:

		Cents
First	2 million feet or part thereof	33
Next	3 million feet or part thereof	28
Next	10 million feet or part thereof	24
Next	20 million feet or part thereof	21
Next	30 million feet or part thereof	20
Next	115 million feet or part thereof	18
Next	90 million feet or part thereof	17
Next	90 million feet or part thereof	16
All over	360 million feet a month	15

It was admitted 540,000,000 feet a month would have to be used to get a rate of 15.87 cents a thousand.

At adjournment late yesterday it was decided to invite officials of the Kansas City Gas Co. to a meeting of the committee.

GAS PRESSURE HALTS DEEP TEST AT KANE, PA.

OIL CITY, Pa., Apr. 30.—Another gas pocket was struck at the deep test well that is being drilled by the United Natural Gas Co. on their lease at LaMont, 4½ miles from Kane. The pressure was so great that the tools, with 250 feet of manila cracker, were thrown upward for a distance of 200 feet from the bottom of the hole, where they are now lodged.

This mishap has occurred before, but never was the volume of gas so great. This strong pressure continued for over two hours before it began to weaken. The drill had reached a depth of 6,010 feet. The work of removing the tools from the hole was started at once with fishing implements, and those in charge of the work do not fear any unusual difficulty in removing them, and hope to resume drilling again within the next few days.

GAS COMPANY PURCHASE

CHATHAM, Ontario, Apr. 30.—An agreement has been entered into between the Chatham Gas Co. and the Union Natural Gas Co., both of this city, whereby the latter has purchased the capital stock of the former. The Chatham Gas Co. has been handling the local distribution in the city of Chatham, securing its supply from the Union; it was the first company to distribute natural gas from the Tilbury Field, prior to which time it was engaged in the manufacture and distribution of artificial gas. Under the terms of the agreement the Union Natural Gas Co. will take possession of the Chatham Gas Co. property in full on October 1, 1927; in the meantime, the Union will look after the maintenance and repair of the lines and will also have the privilege of carrying out any changes or improvements in the system desired. P. S. Coate, now manager of the Chatham Gas Co. will remain with the organization under the new ownership in an advisory capacity as vice president and director. The purchase of the Chatham company gives the Union Natural Gas Co. complete ownership and control of all the distributing organizations which it supplies with natural gas.

NATURAL GAS LINES IN COASTAL TEXAS

HOUSTON, Tex., Apr. 30. — George McCubbin, of Baltimore, a director of the Houston Oil Co., has been making an inspection of the company's holdings in the gas districts in Webb, Duval and Jim Hogg Counties. He is authority for the statement, sent out from Laredo, that the Houston Pipe Line Co. will parallel its present gas lines from those counties to Houston.

Local officials of the company decline to comment on the statement beyond intimating its publication is premature. The McCubbin statement says the new line will consist of 12, 16, 18 and 20-inch pipe.

The Houston Pipe Line Co., which recently installed a large compressor station near Edna, Jackson County, and is installing a smaller station at Lucas, in Live Oak County, to boost the gas from the Cole-Bruni fields, is getting its gas supply from these fields, the Lucas field and the Refugio County Field. The company has been delivering an average of 80,000,000 feet per day to the sulphur plants at Gulf, in Matagorda County, and at Freeport and Hoskins Mound, in Brazoria County; the sugar refinery at Sugarland, Fort Bend County, and to oil refineries and other industries on the Houston ship channel, including the big refining plant of the Humble Oil & Refining Co. at Baytown. The deliveries on one day recently aggregated 87,000,000 feet, which is considered the record for a line more than 400 miles long of 14, 16 and 18-inch pipe. In addition to its present industrial deliveries, the company furnishes domestic consumers at Victoria, Beeville and other towns on its main line.

The contemplated new line will, it is said, enable the company to deliver 160,000,000 feet per day through the two lines. The potential capacity of the Cole Field alone is estimated at 2,000,000,000 feet per day.

Gas wells are the salvation of producers in the Laredo-Mirando district, since the decline in production, suspension of drilling and slump in crude prices. The natural gas companies are paying 5 cents per thousand feet at the well. The Houston Pipe Line Co. and the Southern Natural Gas Co. are the buyers. The latter has a line to San Antonio, supplying both industrial and domestic consumers.

The Houston Gulf Natural Gas Co. will extend its main from the Refugio gas field in Refugio County southwestward to the gas district at White Point across the bay from Corpus Christi. The distance is about 35 miles. The preliminary survey has been completed. Sixteen-inch pipe will be used.

The Houston Pipe Line Co. is laying 25 miles of 16-inch line from its main system near Alvin, south to Texas City. Contracts have been made with oil and sugar refineries and other industries there, which will consume about 3,500,000 feet per day. The company has been granted a franchise to enter the city of Galveston, on Galveston island, which will involve laying a main across Galveston bay, a distance of 2½ miles.

Additional connections are to be made by the Houston Pipe Line Co. to gas wells in the Cole-Bruni section of the Mirando fields.

NEW HELIUM PLANT

ARKANSAS CITY, Kans., Apr. 30.—A $1,000,000 government helium plant may be located in Arkansas City as a development of the helium gas field near Dexter, according to the announcement of S. W. Forrester, oil operator and rancher of Wichita and Catarina, Tex. Mr. Forrester took a leading part in the opening of the Peabody oil field and recently opened what promises to be a good field near Dexter. He said the United States Government and an oil company which he declined to name were interested in the helium plant project, adding the government contract had been approved and the plant would be built either at Dexter or here.

WORK HAS BEEN BEGUN ON SOUTH PLAINS LINE

LUBBOCK, Tex., Apr. 30.—A giant trencher has been set to work about 3 miles south of Lubbock, digging out a ditch for the $6,000,000 gas line to be laid by the West Texas Public Service Corp. from the Panhandle oil fields to Lubbock, Slaton, Plainview, Lockney, Floydada, Hale Center, Abernathy, Tulia, Kress, Canyon, Happy and other points. The corporation has promised that the gas will be available to consumers before fall weather sets in.

Max Cunningham, chief engineer with the Benham Engineering Co. of Chicago, is here to supervise the work. A superintendent and foreman with Williams Brothers, Inc., of Tulsa, general pipe line contractors on the project, are here and will assist in directing the laying of the line. The Panhandle Construction Co., with head offices here, has the subcontract on the line and will do the work south to Slaton and north several miles.

A 16-inch pipe will be laid from the wells in Potter County to Amarillo. At Amarillo the line will be cut to a 14-inch line to Plainview. A 12-inch line will come from Plainview to Lubbock, an 8-inch line will continue to Slaton and an 8-inch line will run out of Plainview to Floydada.

A. J. McMahan, of Oklahoma City, was the promotor of the proposition, which originally was planned to be a $4,000,000 project. The increase was advised by eastern capitalists, who are financing the proposition and who urged that the pipe be enlarged to take care of the future growth of this country.

The line will enable local industries to secure a cheaper fuel and will make natural gas available to the homes in this section.

Crews went to work immediately laying the pipe behind the trencher.

RESEARCH ON HELIUM PLANNED IN OKLAHOMA

NORMAN, Okla., Apr. 30. — Helium gas in Oklahoma will be made the subject of an extensive research by the Oklahoma Geological Survey within the next few years, unless Dr. Charles N. Gould, director, makes other arrangements while in Washington this week to attend a meeting of state geologists.

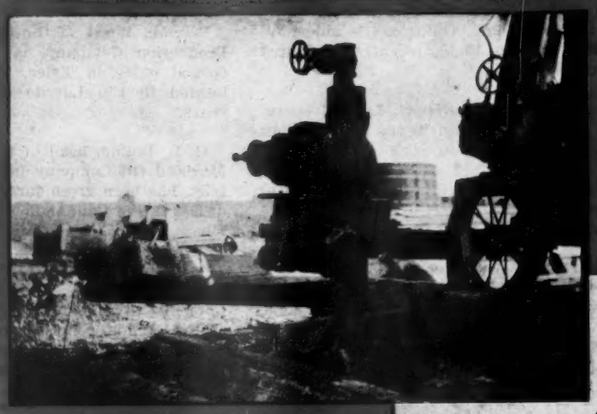
He will confer with officials of the War Department, the Bureau of Mines, and the National Research Bureau. It is likely that some of these departments are interested and will take charge of the research work.

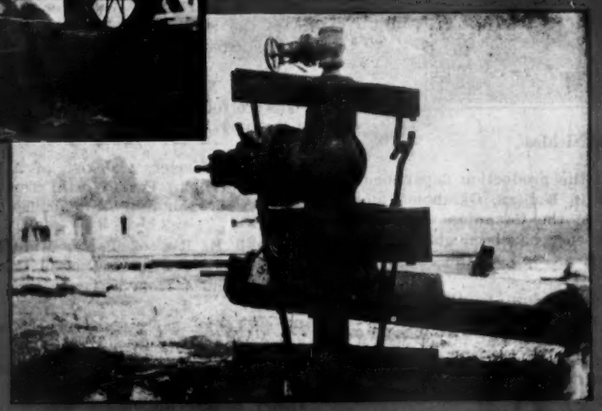
More than thirty wells in the state are known to contain helium gas. Tests of the percentage of the gas are to be made, although the expense connected with the tests will cause a delay of several years before it can be completed.

FIND NONINFLAMMABLE GAS

MIDLAND, Tex., Apr. 30.—Oil men are somewhat nonplused as to the character of a smoky, but noninflammable gas which continues flowing from Meer & Stainforth's No. 1 Meador in Andrews County. The gas was encountered at 2,100 feet, and continues flowing with the hole down 2,600 feet.

Harnessing Fortunes in Oil With KEROTEST





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Oil men are exceedingly particular and exacting about the drilling valves they use, and no wonder, when you consider the days and weeks of patient drilling and the thousands of dollars spent to reach the pay sand.

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Built to the most exacting standards of workmanship, carefully tested with Kerosene to assure perfect steel texture and certified for 2,500 pounds pressure strength by the Pittsburgh Testing Laboratory, you can appreciate why Kerotests create confidence.

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MEN KNOWN IN OILDOM

E. J. Nicklos

E. J. Nicklos, head of the production department of The Texas Company in Kansas, Oklahoma and Kentucky, was trained in the Canadian oil fields, and his petroleum experience has been obtained in several foreign countries, as well as the American fields.

He was born in Canada close to the Petrolia fields and started his work in the producing end of the business at an early age. His father was a Canadian refinery owner, and Mr. Nicklos was born of a family connected with the industry.

At the age of 19 he was sent to the Galician fields by the Bergheim & McGarvey interests, and in three years became superintendent of production for that concern, the youngest superintendent in Europe. After eight years in Galicia, he went to Mexico in 1907 for the Anglo-Mexican Oil Fields, Ltd., to make a report about concessions which that company had obtained.

Upon his return to England this concern tendered him a contract to manage and develop their properties. Three years later he became general manager of the Anglo-Mexican Oil Fields, Ltd., a position which he filled until 1913 when he resigned to enter the contracting business. He was engaged in drilling contracting for the next nine years. In 1922, through drilling two wells for an interest, he became a large producer in the Mexican fields, and then determined to go to America.

At Houston, Tex., he met D. J. Moran, who had known him in Mexico and who offered him the opportunity of becoming connected with the "circle star" concern. He has served since that time under The Texas Company banner. Under his regime, the daily production of the company in Oklahoma and Kansas has steadily mounted to a very imposing figure.

PERSONAL PARAGRAPHS

George D. Locke, vice president of the Barnsdall Refineries, Inc., is at the Chicago office.

* * *

R. J. Berry, of the Mid-Kansas Oil & Gas Company, was a recent business visitor in Houston, Tex.

* * *

Martin Row, scout for the Sun Oil Company at San Antonio, Tex., has been transferred to East Texas.

* * *

Russell Clark, of the natural gasoline department of Phillips Petroleum Company, Bartlesville, Okla., has been making an investigation of the gas situation in the North Louisiana-Arkansas district.

John G. Marzel, Wyoming state geologist, was in Casper, Wyo., on a business trip.

* * *

J. B. Mudd, manager of the Chicago division, Marland Refining Company, has returned to the Chicago office.

* * *

F. D. Williams, Oil City, Pa., president of the National Transit Company, was a Pittsburgh, Pa., visitor last week.

* * *

R. E. Allison, Shreveport, La., independent oil operator, has just returned from a trip to the oil fields at Coleman, Tex.

* * *

James Peat, of Chatham, Ontario, the oldest oil operator in the Petrolia Field, recently celebrated his eighty-fifth birthday.

* * *

William Sebastian, of Shreveport, La., oil operator, has been looking over west Texas oil fields but has returned to his home.

* * *

Holly Clute, chief accountant of the Prairie Oil & Gas Company, Independence, Kans., was a recent Panhandle, Tex., visitor.

* * *

Dr. J. J. Ritchie, of Los Angeles, Calif., is on a trip to the San Antonio territory in Texas where he has started some operations.

* * *

Henry B. Moreno, field clerk and scout of the St. Helens Petroleum at Montebello, Calif., is celebrating the arrival of Henry Junior.

* * *

Clifton M. Keeler, geologist, of Alpine, Tex., has been on a trip to Fort Worth, Tex., and returned to Alpine through San Antonio, Tex.

* * *

Kenneth B. Ris, of Tulsa, Mid-Continent representative of the Griscom-Russell Company, has returned to Tulsa from a Texas trip.

* * *

W. S. Leake, sales manager of the Oil Country Specialties Manufacturing Company of Coffeyville, Kans., is calling on the trade in Texas.

* * *

Henry Baskerville, of the Western Fuel Oil Company of Minneapolis, Minn., called on refiners at Shreveport, La., several days last week.

* * *

F. W. Alexander, attached to the tax department of the Phillips Petroleum Company, Bartlesville, Okla., was a recent Amarillo, Tex., visitor.

* * *

O. P. Jacobsen, production superintendent in charge of Texas operations for the Independent Oil & Gas Company, is visiting the Tulsa offices.

* * *

Ralston M. Talbott, who has maintained offices at Fort Worth, Tex., has moved his offices to San Antonio, Tex., to the Texas Theater Building.

* * *

J. Hoyt Lewis, chief scout for the Marland Oil Company's Panhandle division, is able to return to his duties after recovering from a brief illness.

* * *

O. D. Williams, who has maintained offices in Hebbronville, Tex., near the Jim Hogg County oil pool, has moved his office to San Antonio, Tex.

* * *

E. H. Moore, president of the Independent Oil & Gas Company, Tulsa, Okla., has been spending a few days at the Mineral Wells, Tex., health resort.

* * *

W. A. Williams, president of the Crown Central Petroleum Corporation, Houston, Tex., has returned from a two weeks' business trip to New York City.

* * *

Clyde Bennett, vice president of the Louisiana Oil Refining Corporation of Shreveport, La., was in New York City on business the past week, returning to his desk Saturday.

* * *

W. T. Smith, of the Empire Pump Company of Los Angeles, Calif., and W. J. Anson, Shreveport, La., representative of the company, have completed a week's investigation of oil fields in east Texas.

* * *

Jack Danciger, vice president of the Danciger Oil & Refining Company, formerly of Wichita Falls, Tex., has taken charge of the Danciger company's Texas division with headquarters at Fort Worth.

Miss Irene Cameron, of Toronto, and Miss Blanch Jackson of Petrolia, Ontario, have left for Talara, Peru, to join the staff of the International Petroleum Company.

* * *

E. R. Perry, formerly vice president and general manager of Cosden & Company, has been made president of the Exploration Company, with headquarters in San Angelo, Tex.

* * *

Lon C. Smith, member of the Railroad Commission of Texas, which has charge of oil and gas matters, delivered an address on petroleum over KUT broadcasting station at Austin, Tex.

* * *

William Weed, of the geological staff of the Gulf Production Company, is in charge of the newly-opened office in Tyler, Tex. Mr. Weed has been located in the Laredo district for the past two years.

* * *

C. R. Boling, head of the land department of the Marland Oil Company in the Texas Panhandle district, has been given jurisdiction over both the land offices in the Panhandle and Wichita Falls districts. He will move from Amarillo at once to Wichita Falls.

* * *

C. C. Hamilton, president of the Sun-Ray Oil Company of Tulsa, Okla., was a visitor at the main offices of his company recently and conducted a few stockholders over the properties of the Sun-Ray company before returning to his home in New York.

* * *

Frank Dunn, purchasing agent of the H. F. Wilcox Oil & Gas Company, has been elected to the board of directors, as has C. L. Ayres of Cleveland, Ohio, president of the coal and coke company bearing his name, who succeeds C. B. Jenkins of Charleston, N. C.

* * *

H. G. Ridley has resigned as assistant sales manager of the Imperial Oil Marketing Company at Tulsa, Okla., and has moved to Cincinnati, Ohio, to take over his new position as tank car representative for the Louisiana Oil Refining Corporation in that territory.

* * *

Maj. Sir Richard Barnett, M. P., has been elected president of British Controlled Oilfields, Ltd., and Hon. Edward Augustine St. Aubyn-Harney, K. C., M. P., has been elected vice president. J. W. Creasser has been appointed secretary in place of H. D. Butler, who has resigned.

* * *

William A. Hudson, formerly zone geologist for the Gulf Production Company in the Eastland, Tex., district, and now associated with Buckley Brothers of Mexico, has returned to Eastland from Amarillo, Tex., where he spent several weeks. He will make his headquarters in Eastland.

* * *

H. D. Easton, Shreveport, La., geologist, spent the past week at Amory, Miss., in the wildcat gas field opened last October by the Amory Petroleum Company. Mr. Easton made the location for the discovery well. He also has just completed an extensive investigation in east Texas.

* * *

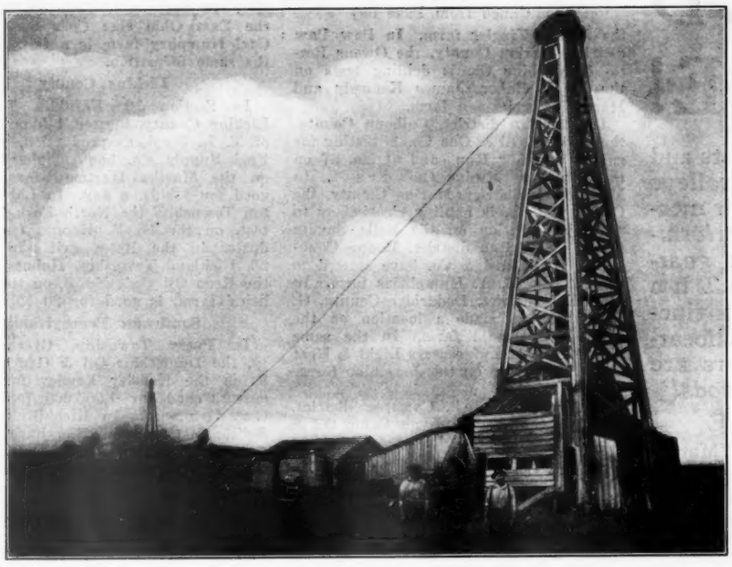
William Baker, of the Halliburton Oil Well Cementing Company, has been transferred to Wichita Falls, Tex., from El Dorado, Ark., and is in charge of the company's business in that district. Eugene Campbell, of the Duncan, Okla., office of the company, is in Wichita Falls with a Halliburton sand tester.

* * *

J. L. Wilson has resigned as sales manager of Crown Central Petroleum Corporation at Houston, Tex. A permanent successor has not been announced. J. Stickler, formerly assistant sales manager, is acting sales manager, assisted by W. C. Hildebrand. All branch sales offices of the company recently were consolidated at Houston.

* * *

Jacob Eckstein, of Wooster, Ohio, of the Kemrow Oil Company, formerly known as Klise, Eckstein & McCann Company, accompanied by Walter Ward of the Ward Drilling Company of Cambridge, Ohio, have been looking over the Saginaw, Mich., Field. The Kemrow company has several leases in Saginaw County and expects to do some work shortly.



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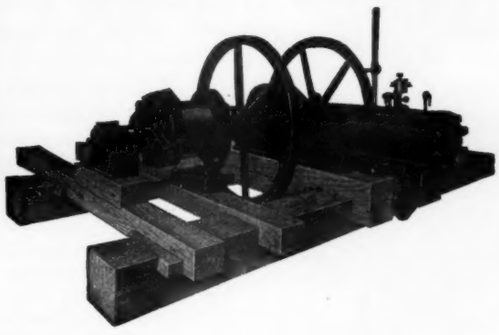

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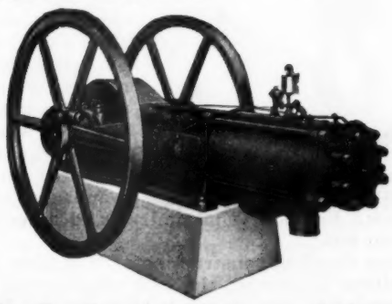
In territories where gas is plentiful and cheap, your Franklin Oil Engine can be converted into a gas engine, in two hours—simply by changing cylinder heads and replacing the fuel pump with a magneto. The result is the most efficient gas engine made. The Gas Engine has another big advantage—*Interchangeability*. 25-35 H.P.—40 H.P.—50 H.P.—60 H.P. Gas Engines are all interchangeable on the same block. Should you so desire you can replace your drilling engine with one of less horse power for pumping without changing a single bolt.

FRANKLIN VALVELESS ENGINE COMPANY
Franklin, Penna.

Oil Well Supply Company
Distribution through its 100 branches

Even though Franklin Valveless Engines can be set up and operated successfully by an inexperienced crew, our distributors will furnish upon request a factory mechanical expert to demonstrate and assist in the economic use of these power plants.

This is the Franklin Gas Engine for Drilling. After the hole is brought in you can move it on to the next job and hook up a Franklin Gas Pumping Engine, operating at an even lower cost.



This Gas Pumping Engine is similar in construction design to the drilling engine and is interchangeable on the same block with it. These engines can show you a power, speed and flexibility almost unbelievable.

LESS ENGINES

GUARANTEED PERFORMANCE!

"CYCLONE" Hoists and "Matchless" Trolleys stand entirely on their merits. Their *proven performance* makes possible *guaranteed performance.* The following offer is convincing proof that these unbeatable material handlers are built to *deliver the goods!*

GUARANTEE

"Cyclone" Hoists and "Matchless" Trolleys are backed by a one-year guarantee against defects in workmanship and material.

Exclusive features of construction place "Cyclone" Hoists and "Matchless" Trolleys in a class by themselves. And that's no idle boast! For instance—

"Cyclone" Hoists have the exclusive *gyrating* principle of operation whereby more than twice the usual number of lift gear teeth are always in mesh. Results? An easier moving, high-speed hoist with a minimum of friction and an exceptionally long life.

"Cyclone" Hoists have the exclusive *single unit principle of construction* which means that sizes are increased by increasing each part, thereby eliminating the objectionable method of obtaining larger sizes by doubling up on smaller sizes. Result? The same simple, compact construction in all capacities of "Cyclone" Hoists.

"Matchless" Trolleys have Flangeless Track Wheels, an exclusive, patented feature. Result? No binding or scraping on edge of beam. Trolley moves freely around curves.

"Matchless" Trolleys have Timken Tapered Roller Bearings which take up all end and radial thrust so apparent in other I-beam trolleys. Result? Friction is minimized and axles and frame are protected from wear.

Every other detail of construction of "Cyclone" Hoists and "Matchless" Trolleys represents the best engineering practice. For complete information get in touch with the "C-M" representative in your territory. If you don't know where to locate him write us direct.

TO THE TRADE

Remember that "C-M" products are safe to sell because they are safe to buy. "C-M" representatives are backed to the limit on sales co-operation. Your inquiry will receive prompt attention and be held in strict confidence. Write.

THE CHISHOLM-MOORE MANUFACTURING CO.
Branches: New York—Chicago—Pittsburgh
Representatives in All Territories for Immediate Service

CHISHOLM-MOORE
OVERHEAD HOISTS CRANES TROLLEYS TRACK SYSTEMS

EASTERN FIELDS

(Continued from Page 60)

the Joseph Tingler farm. In Paw Paw district, Marion County, the Owens Bottle & Machine Co. is drilling tests on the N. T. Baker, James Kennedy and Marcelli Barrickman farm.

In Sheridan district, Calhoun County, the Federal Oil & Gas Co. is testing for gas in the Cow Run sand at No. 37 on the Provident Mining Co.'s tract. In Mannington district, Marion County, the Clifton Oil Co. is hauling rig timbers to a second location on the Belle Snyder farm. In Walton district, Roane County, E. C. Dillard & Co. have started to drill on the E. A. Humphries farm. In McClellan district, Doddridge County, G. L. Cabot has made a location on the Nathan McDonald farm. In the same district, the Manufacturers Light & Heat Co. has a rig up on the Josephine Boyse farm.

On Grave Creek, Cameron district, Marshall County, the Lynn Camp Oil & Gas Co. has the rig completed for a test on the John A. Hicks farm. In Center district, Wetzel County, the Hope Natural Gas Co. is due in the sand on the J. B. Burch farm. In the same district, the Johns Gas Co. has started to drill on the L. F. Burley farm. In Clay district, the Philadelphia Oil Co. is due at a second test on the J. J. Ferrell & Co.'s farm. In McElroy district, Tyler County, the Hope Construction & Refining Co. has started to drill on the Raleigh Grey farm. In Greene district, Carn Brothers are drilling on the B. Morgan farm.

In Lee district, Calhoun County, the Hope Natural Gas Co. has completed the rig for its test on the G. G. Kelley farm. In Sherman district, the same company, C. B. Lewis and M. Westfall farms. In Sherman district, Boone County, the Pure Oil Co. is drilling Nos. 229 and 230 on the Williams Coal Co.'s tract.

Southeastern Ohio

In the southeast quarter of Section 10, Hopewell Township, Licking County, Ohio, J. H. Cole & Co. have completed and shot in the Clinton sand No. 3 on the William Coomes farm. It produced 100 bbls. the first 24 hours. In the northeast quarter of Section 2, Fallsbury Township, same county, the Arkansas Fuel Oil Co. completed and shot in the Berea grit a test on the C. C. and Gladys T. Garrett farm. This well produced 7 bbls. the first 24 hours after shot.

In Section 2, Monroe Township, Coshocton County, the Ohio Fuel Gas Co. completed in the Clinton sand a test on the Johnathan Grant farm. It is a gasser good for 1,000,000 feet and showing a little oil. In the same township, the Empire Gas & Fuel Co. has a gasser in the Clinton sand at a test on the Lysley farm. The Ohio Oil Co. is drilling a test on the Markley farm.

Holmes County

In Section 25, Richland Township, Holmes County, the Reno Oil Co. has a 10-bbl. pumper at No. 3 on the Kyser heirs' farm. In Brown Township, Knox County, the Upham Gas Co. has a gasser on the J. J. Workman farm.

In Section 34, Warren Township, Jefferson County, McFeely & Co. are due in the sand at a test on the J. Selvaney farm. In Coal Township, Perry County, the Hope Construction & Refining Co. is due in the Clinton sand on the James McCune farm. In Ward Township, Hocking County, the Kachelmacher estate is due in the Clinton sand on the James J. Tracey estate. In Section 20, York Township, Morgan County, the Dailey Oil & Gas Co. is drilling on the Roy Floyd farm. In Section 11, Meigs Township, Muskingum County, the Ohio Fuel Supply Co. is drilling on the W. Prouty farm. In Section 2, Washington Township, Hocking County, the same company is due in the Clinton sand on the C. R. McCarty farm.

Coshocton County

In Section 1, Monroe Township, Coshocton County, the Empire Gas & Fuel Co. has completed a second test on the Peter Lepley farm. It is a gasser in the Clinton sand good for 500,000 feet. In Section 8, Tiverton Township, the East Ohio Gas Co.'s test, on the Carl Humphry farm is a fair gasser in the same formation.

Licking County

In Section 10, Franklin Township, Licking County, located 1½ miles south of T. L. Stephens production, the Ohio Fuel Supply Co. has completed a test on the Martha Hartman farm. It is good for 4 bbls. a day. In Lot 7, Newton Township, the North Fork Oil Co.'s test, on the H. B. Koontz farm, is a duster in the Berea grit. In Section 28, Richland Township, Holmes County, the Reno Oil Co.'s No. 3, on the Keyser heirs' farm, is good for 20 bbls. a day.

Southwest Pennsylvania

In Perry Township, Greene County, the Dunn Mar Oil & Gas Co.'s No. 3, on the Endsley Lemley farm, is a gasser, good for 1,000,000 feet in the Gordon sand. In Richhill Township, Smith, McCracken & Co. have a 4-bbl. pumper at a test on the Hattie Whipkey farm. In Springhill Township, John Morehead and others have completed a test on the J. Gump farm. It is a gasser in the Big Injun sand.

Just outside of the borough of Darlington, Beaver County, J. L. Abrams & Co. have completed a test on the W. M. Imbrie farm. It is a light gasser.

In the gas development at Hickory, Washington County, all late completions are gas wells. The following gas wells are included in the list: Hickory Penn Co.'s No. 1 Ewings heirs; Dallmyer & Co.'s No. 2 Rankin heirs; Philadelphia Co.'s No. 2 William Russell; McKinney & Co.'s No. 1 Miller Brothers; and Dallmyer & Co.'s No. 1 Sleeth heirs farm.

One mile south of Nineveh, Morris Township, Greene County, Charles T. Sutton and others have completed a test on the George Phillips farm. It is dry in all sands. Adjoining the above farm, the Carnegie Natural Gas Co. has drilled through all sands at a test on the M. Breeze farm, and had the same luck.

MEXICAN OIL TAXES PAID BY COMPANIES

Yield of Mexican oil production taxes in February totaled 1,290,523 pesos, compared with 1,338,955 pesos in January and 1,987,517 pesos in February, 1926. Largest amount was paid by Mexican Petroleum Co. (Pan American Petroleum), 565,200 pesos. Mexican Eagle Oil Co. paid 221,459 pesos, Transcontinental Oil Co. (Standard of New Jersey) 152,785 pesos and Corona (Royal Dutch) 108,465 pesos.

Export tax on 4,321,073 bbls. of oil in February yielded 545,470 pesos, compared with 575,012 pesos in January and 806,565 pesos in February, 1926. This taxation, under agreement with New York bankers, is earmarked for service on foreign debt. Mexican Petroleum paid 248,245 pesos, Mexican Eagle 89,623 pesos, Sinclair 41,496, Corona 41,306 and Transcontinental (Standard Oil of New Jersey) 72,453 pesos. Sinclair apparently exported largely from stocks, as its portion of total production was only 0.7 per cent.

Destination of Mexican oil exports in February were 62 per cent to the United States, Cuba 18 per cent and England 11 per cent.

NEW MARINE FUEL

Tentative plans have been made for the installation of pulverized coal burning equipment on board a United States Shipping Board steamer in order that the possibilities of the new marine fuel may be submitted to a thorough test under actual service conditions. Plans for the proposed installation probably will be held in abeyance pending a report on the results of the tests of the same type of fuel under a water tube boiler on the towboat Illinois of the Mississippi-Warrior Barge Line on the run between New Orleans and Baton Rouge.

RESULTS OF TESTS ON MATERIALS IN SOIL CORROSION INVESTIGATION

K. H. Logan, electrical engineer, in charge of the soil corrosion investigations of the Bureau of Standards, has announced that the outstanding result of the tests of pipe and other materials buried in the earth for period of from one to three years is that the character and extent depend on the soil in which they are placed.

How important the subject is, Mr. Logan explained, is indicated by the interest of the large companies and organizations in the result of the tests, of which they have just been advised. At a recent advisory meeting at the bureau, there were present: J. L. Christie, Bridgeport (Conn.) Brass Co., representing the American Society for Testing Materials; William A. Cowan, assistant chief chemist of the National Lead Co., Brooklyn, N. Y.; William G. Schneider, the Copper & Brass Research Association, New York City; E. S. Taylerson, American Sheet & Tinplate Co., Pittsburgh, Pa.; D. D. Ransdell, Washington, D. C., Gas Light Association, representing the American Gas Association; E. T. Ford, Washington representative of the Mueller Co., Decatur, Ill.; J. R. Cain, Washington representative of the American Rolling Mill Co., Middletown, Ohio; R. L. Duff, metallurgist of the Standard Oil Co. of New York, representing the American Petroleum Institute; A. J. Sheldon, American Rolling Mills, Middletown, Ohio; W. H. Spowers, Jr., American Machine Foundry Co., Brooklyn, N. Y.; A. F. Miller, Baltimore, Md., representing the U. T. Hungerford Brass & Copper Co., and the Chase Brass & Copper Co.; R. M. Burns, the Bell Telephone Laboratories, New York City; C. A. Neimo, Mueller Brass Co., Buffalo, N. Y.; W. J. Mix, the Mueller Co., Decatur, Ill.; F. M. Levy, Mueller Brass Co., Port Huron, Mich.; A. J. Kraemer, United States Bureau of Mines, Washington, D. C.; J. K. Crowell, New York City, representing the American Gas Association; Charles A. Hill, chief engineer, Mueller Brass Co., Port Huron, Mich.; Harry R. Hall, Hyattsville, Md., deputy chief engineer of the Washington Suburban Sanitary Co., representing the American Waterworks Association; and Edward Kerschner, Washington, D. C., the Standard Underground Cable Co. Manufacturers in these cases had materials under test.

Official Report Later

"I presented the results of these tests," said Mr. Logan, "and the results will be published by the Bureau of Standards as an official report late this year. Briefly, I may say that we have found that there was very little corrosion of the brass pipes. The specimens of the lead cable sheath, a covering for telephone cables, showed considerable corrosion in a few of the soils in which they were buried. The lead-coated pipes showed a number of small pits as a result of being in a number of the soils. The outstanding result was that the tests conclusively showed that the character and extent of the corrosion of these materials largely depends upon the kind of soil in which they are buried. Materials having quite satisfactory results in many soils had unsatisfactory results in corrosion in some other soil conditions. In selecting pipe for underground use, soil must be considered, and that applies wherever pipe is used in this country. Usually, we find, a well-drained, sandy soil is not corrosive. But even that has exceptions, as, for instance, the same rule does not apply in certain Colorado soils.

Lead Sheath Materials

"The materials I have reference to are mostly nonferrous, but also a few specimens of iron and steel were tested. When the first soil corrosion tests were planned it was decided to include cable sheath because they are involved in the studies of stray current electrolysis. We secured antimony lead used by some telephone companies and commercial lead, frequently used for power cable sheaths. The lead was received in the form of sheaths or tubes and cut into 2-foot lengths. To facilitate the test, the tubes were split and the lead flattened to the form of sheets before the specimens were buried. Part of these were buried in 1922 and the remainder in 1923 and 1924. They were weighed to 0.1 gram before burial and again upon recovery. They were cleaned with a solution of oxatic and nitric acid after their removal from the soil, and the losses of weight and rate of loss were determined.

"Specimens of the antimony lead removed in 1926 showed at least slight pits in 30 out of the 47 locations. In eight of these locations, the pitting is slight. Usually the pits are confined to a small portion of the surface. The specimens stood on edge in the trench and frequently the lower portion shows the maximum corrosion. In the 24 locations from which specimens were removed in 1924 and 1926, 16 showed a decreased rate of corrosion. In a portion of these 16, the decrease in rate is small and may be due to accidental conditions such as variations in the soil. In a few cases, the decrease is 50 per cent or greater. In general, the results for the commercial lead sheath are similar to those for antimony lead. Of 47 specimens removed, in 1927, 29 show some pitting; in 8 the pitting was slight; in but 2 was there any increase in rate of corrosion and that insignificant; and in 14 out of 25 there was 40 per cent or more decrease in rate of corrosion.

"The antimony lead was better in 21 soils and worse in 19 soils, after two years' burial, and after four years' burial the antimony lead was better in 6 soils and worse in 16. The difference in the results for the two periods is accounted for partly by the greater decrease in corrosion rate as to commercial lead. The differences in the two leads are not great and it is too early to draw conclusions as to their relative merits.

Lead-Coated Steel Pipes

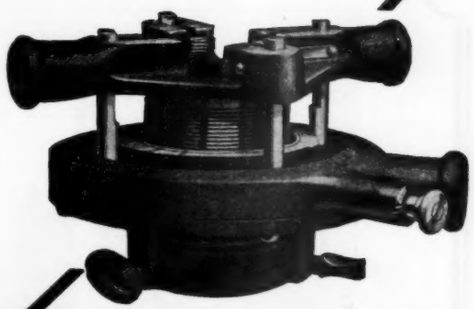
"Lead-coated pipes 1½ inches in diameter and 6 inches long were buried in 44 soils. Comparing the average rates of loss of 10 lead-coated specimens with the average rates of loss of 6 Bessemer steel specimens from the same location, we have found that the lead-coated specimens corroded at a slower rate in all soils. The rate of pitting of the lead-coated pipe was greater in 15 soils and less in 23. Comparing lead coatings with the commercial lead cable sheaths in the same soils we find that the rates of corrosion of the sheath was greater in 22 soils and less in 12. Both materials show pits in 21 soils. The sheaths show pits in 7 soils in which the coated specimens were not pitted, while the latter were not pitted in 9 soils in which sheaths were pitted. The loss of weight was in several cases attributed largely to corrosion of the iron beneath the lead. The different potential between lead and steel is not great but specimens showing greater rate of pitting than that of the bare steel suggest the increase may be due to galvanic action, which may be definitely shown in specimens to be removed later.

Brass Fittings

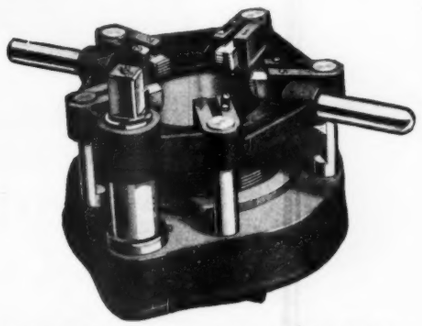
"As brass shutoff cocks are used in connection with water and gas service pipes, we sought to determine whether they would be affected by soil action and whether their use in connection with iron and steel pipes would result in galvanic action. The Waterworks Standardization Committee of the National Brass Manufacturers' Association furnished the test materials. The results show the brass nipples had little loss of weight, but usually are dark and reddish. The galvanized nipples show greater losses and in a large number of soils most or all of the galvanizing has disappeared. In one soil all the steel nipples were perforated.

"The short sections of lead pipe con-

TOLEDO NO. 00-A RATCHET TOOL FOR THREADING 1" TO 2" PIPE.



TOLEDO NO. 1A—THE 1" TO 2" RATCHET THREADER KNOWN FOR ITS DEPENDABLE SERVICE.



TOLEDO NO. 2—THE ORIGINAL 2½" TO 4" THREADER. NEVER EQUALLED FOR EFFICIENCY.

"TOLEDOS"

MEAN PIPE THREADING SATISFACTION ALWAYS

There is no guessing with "TOLEDO" pipe tools. You know that with a genuine "TOLEDO" you will get satisfactory results, whether it is cutting or threading ⅛" pipe or 12".

These light, portable, compact, easy-operating pipe tools mean the last word in pipe tool efficiency.

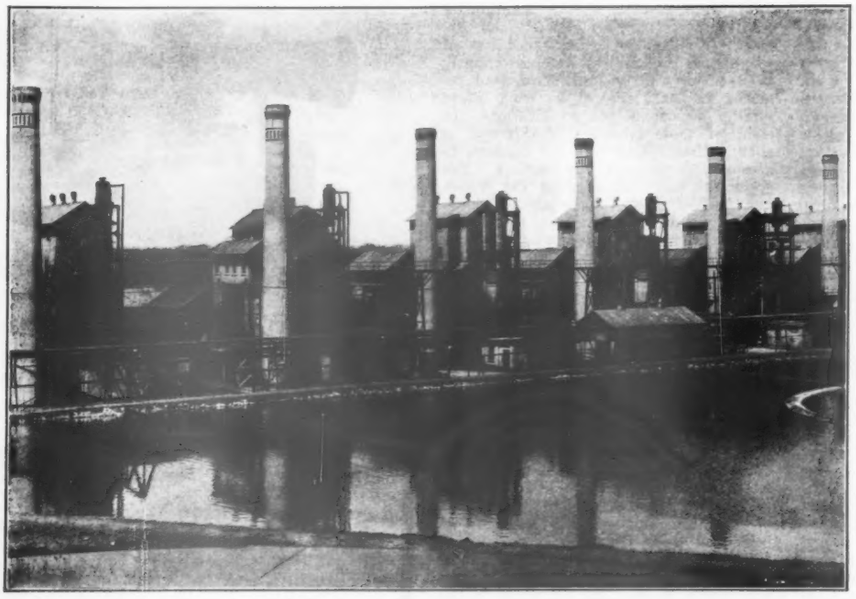
Thousands upon thousands of operators will vouch for their superiority.

A postcard brings you the complete "TOLEDO" catalog and list of dealers in your territory who can supply you.

TO BE SURE OF SATISFACTION SPECIFY "TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

NEW YORK OFFICE, 72 LAFAYETTE ST.



HOLMES-MANLEY CRACKING INSTALLATION AT LOCKPORT, ILL. WORKS OF THE TEXAS COMPANY

This installation during the month of December, 1926, charged at a rate of 1155 barrels per day producing yields and products as follows:

Yields	*Percent of Total Charge*	*Ultimate Yield Percent of Virgin Stock*
*400 E. P. Untreated Gasoline	40.75	70.07
Cycle Gas Oil (Recharging Stock)	41.85	.....
Cycle Fuel Oil	13.25	22.79
Gas, Coke and Loss	4.15	7.14
Total	100.00	100.00

(Charge consists of a Balanced Mixture of Average Mid-Continent Gas Oil)

AVERAGE TESTS OF FINISHED GASOLINE PRODUCED:

Gravity A.P.I.	62.4
Color (Saybolt Chromometer)	25 Plus

A.S.T.M. DISTILLATION

Initial	88° F.
20%	176° F.
50%	261° F.
90%	378° F.
End Point	402° F.

TEST OF CYCLE FUEL OIL PRODUCED:

Gravity A.P.I.	5.8
Flash (Clev-o-cup)	330
Sediment — %	.27
Viscosity at 122° F. Saybolt Furol	322

*The untreated gasoline is finished with a "Doctor" treatment.

The Holmes-Manley *Cracking* Process

The gasoline yield is not only high but of a definitely superior quality.

The Licensee receives:—

1. *A Proven Process*
2. *Complete Technical Service*
3. *The Benefit of Future Developments*

Address Inquiries to

THE TEXAS COMPANY

W. S. S. RODGERS

17 Battery Place, New York, N. Y.

Branch Office

816 Palace Building, Tulsa, Okla.

"Good!"

"WHAT kind of service are your Buckeye Pipe-Line Trenchers giving?" someone asked the Sheehan Pipe Line Construction Company, of Tulsa.

"Good," was the reply—"We have five of them. First machine bought in 1922—fifth in 1926."

Another proof that every Buckeye by its performance sells other Buckeyes. A big percentage of our new business consists of repeat orders. True of the oil industry, it is equally true of the whole construction world.

The Sheehan Pipe Line Construction Company uses their Buckeyes for ditching for pipe line sizes 4 to 20 inches. From 4 to 12 inches they ditch after the line has been laid on the ground—the ditchers straddling the pipe. Trench widths range from 16 to 26 inches, depths from 20 to 66 inches. Each Buckeye averaged 1500 to 4000 lineal feet per day of 8 hours.

Because they meet its every requirement, *more Buckeyes are used in the oil field than all other types combined.*

There is a Buckeye for every need. Model 15, for instance, is a light-weight, compact ditcher for small trenches. Easily transported, it is ideal for digging lead and small branch lines. Write for special bulletin covering it.

The Buckeye Traction Ditcher Co.

Manufacturers of Pipe-Line Trench Excavators and Pipe-Screwing Machines

Findlay, Ohio

There's a Buckeye Sales and Service Office near You

Buckeye TRENCH EXCAVATORS FOR OVER 30 YEARS

nected to the brass caps show pitting in many soils and in all soils their rate of corrosion is much greater than that of the lead cable sheath. This may be taken as an indication of galvanic action. But as yet the reduction in the wall thickness of the lead pipe is small and as there is a rather positive indication that in most soils the rate of corrosion of lead decreases greatly with time, the galvanic action may have no commercial importance. In a number of cases the threads on the lead pipe were stripped in disconnecting them from the brass caps.

Failure of Two Metals Noted

"The most striking features of the tests of metals and alloys buried at the request of the Bureau of Mines, were the heavy adherent layer of corrosion products on the copper and bronze in the tidal marsh; the deep isolated pits on some of the zinc specimens and failure of the aluminum and duraluminum by the formation of blisters. These seem to start as a slight elevation of the surface of the metal caused by the formation of corrosion products beneath the surface. The corrosion seems to be going on beneath rather than at the surface of the metal. This apparently continues until the specimen goes to pieces. Conclusions regarding the corrosion of these specimens must await the removal of others.

"Specimens of sheet steel coated with zinc by the metal spray process were also tested. The appearance of the metal spray coated specimens does not indicate that this process is superior as a means of reducing soil corrosion.

"The success of calorizing as a means of reducing oxidation of metals at elevated temperatures suggested that the process might also be effective in reducing corrosion in soils. To help determine this, we buried in six soils specimens of steel pipe 2 inches in diameter and 6 inches long, filling the inside of each with asphalt to prevent corrosion of the interior. Specimens calorized by the wet process and by the dry process were buried. After two years in the soil, considerable corrosion was found on several of the specimens but the pitting was rather shallow and the specimens appear to be in better condition than the corresponding specimens of untreated steel. Specimens removed later should afford a better basis for deciding the value of this process as a means of preventing soil corrosion."

PETROLEUM STORAGE DISCUSSED AT CAIRO

The recent International Navigation Congress at Cairo took up for discussion the most suitable methods for the storage of petroleum products. Engineers of considerable prominence from various countries took part in the presentation of facts, under the lead of M. Peretti, chief inspector for the Italian State Railways. Countries which are deprived of their own natural resources in petroleum are having to adopt the method of France, either in part or whole, of insisting upon stocks being kept in hand for emergencies. This obligation is put upon the importers as being the safest and easiest way of solving the problem. If the obligation rested with the state, the cost would undoubtedly be much greater than it is by private enterprise.

As a counter proposition to the plan mostly in vogue—of erecting large steel tanks—it has been proposed to have subterranean reservoirs. But the suggestion, the London Petroleum Times says, could get little further than the idea, for the cost would be almost prohibitive—quite three times the cost of reservoirs above ground, some of the engineers averred. The congress, however, in the main had the opinion that the underground was preferable, as much for the advantage in exploitation as for its immunity from danger in time of war, and for the better holding of the contents in any case. After debating as to the size most convenient there was a consensus of opinion that tanks of from 10,000 to 12,000 tons would be the most economical.

The kind of material for construction was debated at considerable length, mainly on the question of metal versus reinforced concrete. The steel reservoir had the advantage and was recommended. The concrete construction was considered to have not given good results so far; it had been difficult to avoid fissures in the walls or the base, and from which serious leakage resulted, notwithstanding various forms of covering or "lining" the cement work. It was believed, however, that some suitable application would be forthcoming for completely eliminating this defect. It is probable that the question will be brought up again at the next congress.

There are, in addition to the question of materials for the construction of reservoirs, those of situation and form of surroundings for insuring safety from air attack — or even cannonading from long distances. In a word it is important that the localities should not be easily identified from airplanes or other aircraft. The "camouflage" should be, as far as possible, a question of natural surroundings. Then there is also the matter of safety for adjoining storage in case of a reservoir being damaged or set on fire. If "banking round" the cylindrical reservoir be adopted, then the cost would become almost, if not quite, the same as for an entirely underground construction. The disadvantage would be that, unless placed in an elevated position, pumping would have to be employed for taking out the contents. And the covering of a concrete reservoir would be a very costly matter if the diameter of the cylinder were large.

COLOMBIAN PIPE LINE TO BE READY IN JULY

Exports of crude petroleum from Cartagena, Colombia, during February, Consul Lester L. Schnare reports, amounted to 843,681 bbls. net., valued at $1,620,157, a decline from January imports of 907,772 bbls. valued at $1,770,156. The total exportation of crude from this port from July, when the first shipment was made, to December, 1926, inclusive, amounted to 4,642,227 bbls., valued at $9,429,899. Of the February shipments 689,858 bbls., valued at $1,320,203, went to the United States, being divided between three Atlantic ports. Argentina received 86,734 bbls. and England 67,089. The shipments were carried in 10 oil tank ships, the average cargo being 84,368 bbls., slightly larger than the average cargo of the preceding month.

The work of completing an additional oil pipe line proceeded steadily throughout the month, during which the last of the pipe for the line was received at this port. The additional line should be completed about July 1, increasing the capacity of the present line to about 50,000 bbls. per day.

DERRICK ANNUAL REVIEW

The Derrick Publishing Co., Oil City, Pa., has just published in booklet form its Annual Review of the Oil Fields for 1926. The figures on oil field development, crude oil prices and other statistics in the booklet were gathered by the oil staff of The Oil City Derrick and The Oil and Gas Journal. The book is one of a series which give a complete history of the oil industry from its beginning in statistical form. The price of the new booklet is only 35 cents.

RECORD EXPORTS OF TRUCKS

A new high record in shipments of American motor trucks to foreign markets was established was established, the Department of Commerce announced, on March 31, when 10,120 units, or a gain of 72.2 per cent over February, 1926, were exported. The total February production amounted to only 38,029 trucks, showing that exports registered 26.6 per cent of the output.

Below 4000 feet with Timkens

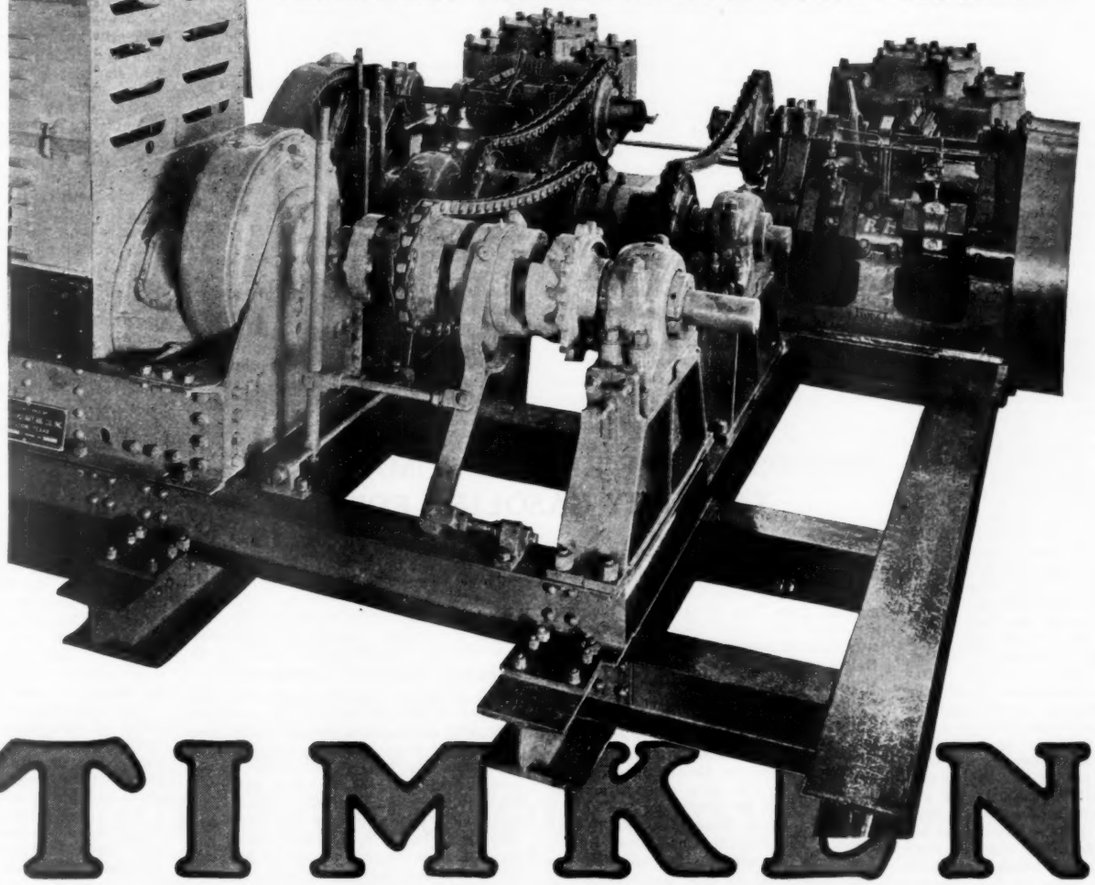
Drilling is a notorious test of machinery. The bearings, as always, get the brunt. It is significant that many of the most important makers design Timken Tapered Roller Bearings into equipment intended for all such heavy work.

Records are frequent with Timken-equipped machinery because Timken endurance is more than a match for continuous high-pressure operation. Shock, speed, thrust and weight are all rendered harmless by the tapered construction, *POSITIVELY ALIGNED ROLLS* and electric steel of Timken Bearings. They also eliminate frictional wear, power waste, and the need for constant lubrication.

Timken-equipped outfits are specified where operations are on the most positive, economical basis.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

Portable Rotary Rig Co., Inc., of Houston, designs Timken Bearings into this Double Compound Pump Unit, credited with records of more than 4000 feet.



TIMKEN
Tapered
ROLLER BEARINGS

Improving the Use of Air-Gas Lift

Petroleum Engineer Presents Interesting Suggestions for Consideration of Research Men

By Frank Peterson

With a few isolated exceptions, the production of oil from Mid-Continent wells (Oklahoma, specifically) by the method known as air lift is an innovation, so far as the fraternity in general of producers are concerned. There are in California and in southern Texas, notably, where depths have reached more than 3,000 feet, fields in which operators have been familiar with and using the method for years. Perhaps a few instances of such operation are to be found in Oklahoma other than one specific case with which the writer is familiar, viz., that of the Mid-Continent Petroleum Corp.'s Smith plant at Dilworth, Kay County. This plant has been in operation, flowing a single well, for a period of nearly 10 years.

As a consequence of the present depth to which a large measure of productive effort has had to go for pay, there seems to be a concerted rush to the adoption and usage of the air-lift method of accelerating or sustaining flush production. This has been most notably carried out in the Seminole district, Oklahoma, where four pools of major production are tapping and producing from sands more than 4,200 feet deep. The result of the application of the method in this Seminole instance has been so universally satisfactory that it may now be assumed that for wells and conditions comparing any way nearly with those prevailing at Seminole, and as they have prevailed for some three years at Covington, the method will be more or less universally applied until something more effective, practical or economical is developed to the same end.

Inventive and Experimental Effort

As a consequence of the novelty and the newness of the method to many operators of the Mid-Continent fraternity, much animated interest is being evinced just now, much ground is being gone over which has already been thoroughly worked, particularly in the direction of inventive and experimental effort. The essential data of the technology of the method is available to all; it seems to be fairly well established in the terms of efficiencies that can be realized; the limits within which the method may be applied, practically and economically. Much effort is being expended by the field forces, particularly, in the direction of the development of delivery heads or nozzles, for instance, along the lines and in the direction of the simple appliances used for siphoning, by means of the jet, liquids from one level to another. After a review of this particular detail, the conclusion is necessarily reached that but little will be gained in any effort to apply the principles of a siphon or a jet head in the direction of increasing the efficiency of the lift performance. Undoubtedly something will be gained over and above the bare application of an open tube in an open casing. Mechanical authorities have set forth the fact that some form of head that will break the stream of oil in spray is more effective than a complete disregard of this detail. But it is obvious that a jet head designed to accomplish some material advance in efficiency through the principle of induction or eduction jetting will fall short of any material accomplishment. It is probable that such a form of head might develop the equivalent of a few feet reduction in the total head or lift depth which must be sustained in operation. The reason will be seen along the following lines: the submerged delivery point for release of the flow medium, gas or air, may be thought of in lines parallel to delivery of steam in the cylinder of a reciprocating pump or engine between the piston and the head of such a prime mover, the strata pressure being comparable to the fixed head and the column of fluid to the movable piston in the cylinder of a prime mover. And one may follow the same lines of analysis from the breaking or initial flow point of such application to the usual subsequent condition after the head is broken and the column takes the form of a mixed spray flow of the fluid and the gas, the latter condition being analogous in every way to the former, except in the range of pressures that prevail.

Breaking the Fluid Column

In order to avoid in deep wells and heavy submergences the maximum ranges of pressure that are required to break the column and initiate the flow from the well, a more logical effort is being successfully applied now whereby the fluid column is broken and the flow initiated progressively through trip valves located at successive depths from the top. So far as the writer's knowledge goes, this is new development in the art, and it seems very practical. Other and equally practical details which may be applied to facilitate the method of operation or increase its efficiency may, and probably will, be brought forward as the general usage of the method is extended.

While, as previously stated, essential data of application of the method is available, there is one channel of information yet to be augmented from experience to be gained, viz., more useful information with regard to the relation of flow pipe area to volume of fluid to be lifted. It appears very probable that the method will be carried on into practical usage where the volume of production to be handled goes much below that now thought practical. The present impression among producers is that when the amount of oil or fluid to be lifted from a well may drop below 100 bbls. daily, or such a matter, the old method of pumping will have to be applied. It appears more likely at this moment that this will not be the case; that the development of information and practice in this direction will adjust the areas conducive to successful lifting of small quantities of fluid to that degree whereby, so long as it is desired to maintain the resident pressure on the producing strata sufficient to lift the available oil, the method may be carried on successfully down to a stripper or range of a few barrels daily.

Equipment Makers Kept Busy

The accepted general and present active transition of the producers to use of the method has made an unprecedented call on the builders of equipment of the type required to the extent that a rather large diversity in character of such equipment has been called into demand, and to a large extent, probably without deliberate consideration of the type of equipment best adapted to the usage to which it is put. It is probable that the most conservative or deliberative judgment which has been applied in selection of equipment has taken into account the adaptability of the machinery for the purpose called for in the lifting of oil, and secondarily, for the purposes to which the same machinery equipment might be applied when the requirement as air-lift machinery might not exist. In other words, the most conservative in selection of equipment would have in mind its adaptability, probably to use in gasoline plants for compressing gases to the range necessary and applicable to that end.

Since the industry seems to progress always in expanding terms, it is questionable whether the consideration of the dual usage of the equipment should be given primary consideration. Also the suggestion which arises of the probability that the equipment can be applied through a wide range of capacity operation with regard to well output indicates very probable long-continued application of any installation of machinery. Naturally enough the volume or capacity requirement of an installation will not remain constant, and some portion of the equipment may be removed and transferred to other usage. In view of the prevalent depth to which we are most likely destined to go for production from here on, the conclusion is quite logical that such excess machinery as will be available from present installations when the capacity requirement is reduced will be useful as and when we go forward into additional area development.

Installation Problems

Mobility or portability of equipment is an important factor. It has been so especially in the case of Seminole operation this past winter. Road conditions in this particular area have been particularly difficult, and the handling of the heavy type of equipment has been especially burdensome, while the handling and placing of the lightest equipment has not been so fraught with difficulty, and has probably been accomplished at some lesser expense.

Contrary, probably, to the conception prevailing in the outside world, the oil industry is the most conservative of any in its expenditures for the equipment it requires. Selection of its equipment is based almost invariably on the most conservative and careful study, looking to efficiency and effectiveness of that equipment. In view of this fact, the industry has seen, due in part to stressful demands made on the manufacturers of machinery required and in part to the condition of roads for transportation as above mentioned, a rather extraordinary innovation in the type of equipment which has been applied in the Seminole fields in the plants built for the purpose of pressure-flowing operation. It was found in the early operation of some of the installations that pressures required to break the column head of fluid ran as high as 800 or 900 pounds per square inch, and this limit is not unusual, as encountered in the method generally. As a consequence, naturally, the selection of compressor equipment must call for the heft necessary to this end. Two general types of compressor equipment have been employed, and this relates wholly to displacement capacity per unit. The larger type and capacity is low-speed equipment; the small type, as related to displacement capacity, is of the high rotative speed type, and the usage of equipment seems to be fairly evenly divided between the two types. The prime movers called into usage to handle these compressors are gas engines and public service electricity, with a few noted exceptions wherein oil and steam engines which have been salvaged and transferred from other operations are also being used.

Variety of Installations

The innovation above mentioned is the application of light, high-speed multicylindered gas motors. This break from the old lines of standards has the earmarks of novelty, in view of the fact that a great many of these motors have been installed and are now operating with apparent success. It remains to be seen, of course, how this departure will ultimately succeed. Motors ranging in capacity from 75 to 100 horsepower have been installed in flocks. Their rotative speed runs as high as 1,200 r.p.m., and without desiring to pass heated judgment, the writer's opinion would be that the maintenance of these high rotative speeds in prime movers will involve high

(Continued on Page 116)

PROPOSED PIPE LINE IN RUMANIA TO CARRY GASOLINE FOR EXPORT

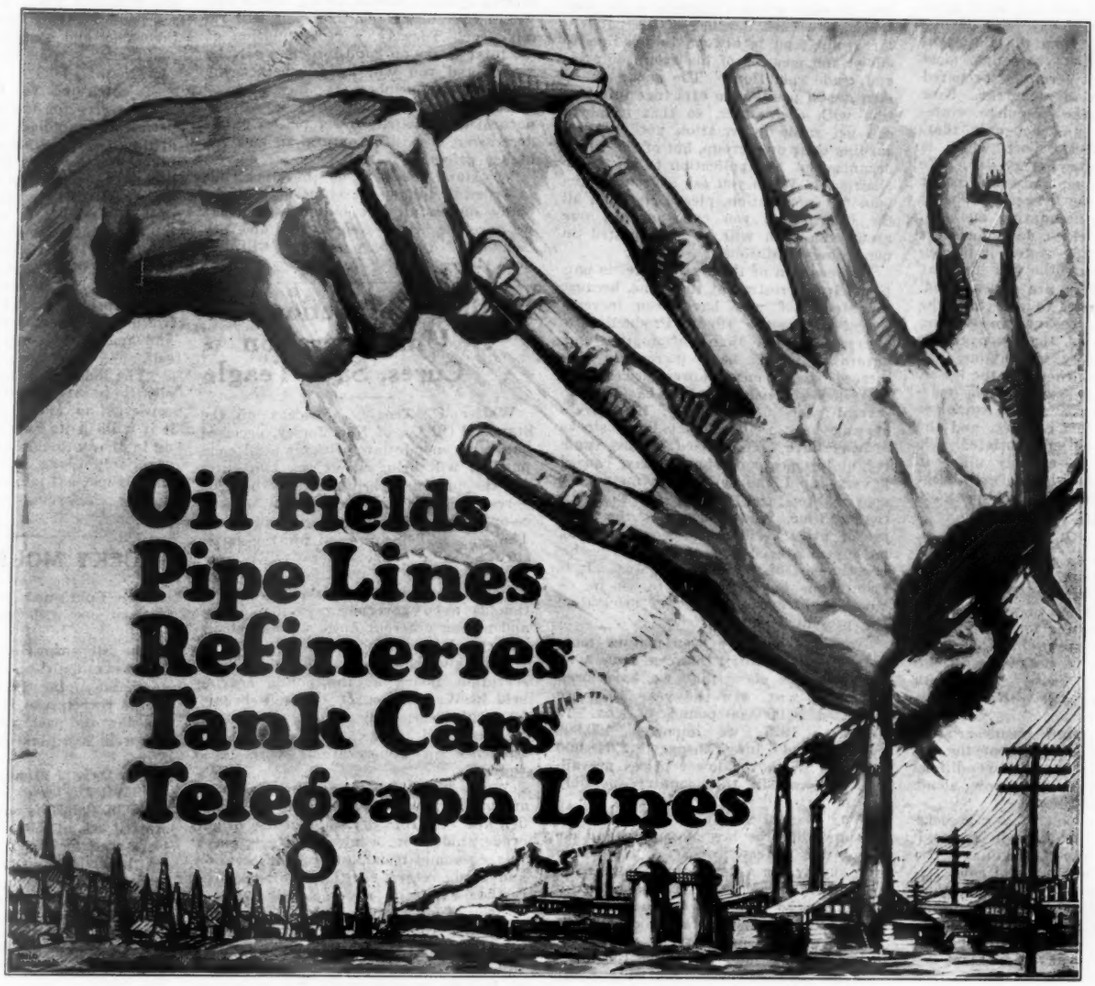
The discussions which have been taking place for a year or more, looking towards the reorganization of the Rumanian pipe line service and the construction of a new 8-inch line for the transport of motor spirit from Campina-Baicoi to the export station at Constantza seem at last to be headed in the right direction, says the London Petroleum Times.

The existing export pipelines running to Constanza on the Black Sea and to the Danube station at Ramadan (Giurgiu) are owned by the state and operated by the Pipe Line Service under the administration of the Rumanian State Railways. The present Constantza line is used only for illuminating oil. The reorganization of the pipe line service contemplates the creation of an autonomous pipe line company on the basis of the so-called law for the Commercialization of State Enterprises—which means that the Rumanian government must have a majority interest in the new operating enterprise.

The government originally proposed to hand over the existing lines and installations to the new operating unit at a valuation of 1,500,000,000 lei (approximately $7,500,000), but as this was obviously too high a valuation the government agreed to the appointment of a commission of experts for the purpose of determining the approximate value of the state's equity in kind. This valuation has now been fixed at 850,000,000 lei, so that this amount will represent the participation of the state in the pipe line company which is about to be formed. The understanding is that a meeting of oil company representatives will be held within a few days in order to determine how far the companies are prepared to go in financing the new enterprise.

According to present intentions, the amount of 650,000,000 lei will be used primarily for the construction of the new Campina-Baicoi-Constantza benzine line, the contracts for which ought to be awarded within three months at the most. Unfortunately, however, it will not now be possible to get the new line completed this year; but if no further time is lost in setting up the new company's financial structure and making definite arrangements for placing the business, the line ought to be in operation by the summer of 1928. Nothing definite is known yet as to who will supply the pipe, fittings, pumps, etc., but the present understanding is that a French firm will be awarded the contract for digging the ditch.

It is proposed that the new pipe line company will be granted a 30-year charter, with the understanding being that all new works and installations erected by the company during the first 20 years of its existence will revert to the state without recompense on the expiration of the charter, but with the company being allowed adequate scope for amortizing its capital investments during the 30 years of its control over the export pipe lines.



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REFINERS URGED TO CO-OPERATE IN COLLECTING TRADE STATISTICS

By E. U. Lyons*

The methods of accounting have been changed over the past 10 to 20 years, so that a statement put out by a modern refining company today is on an entirely different basis from the statement of 20 years ago. Ten years ago, most refiners made up a carefully prepared statement at the end of each year. Now most companies make complete statements each month, and not only that, but they take a stock report, which is practically an inventory, every day. We have the Federal income and excess profit taxes to thank for the interest displayed by the industry in accounting methods. A company today which does not have an excellent accounting system is in constant hot water with the tax unit at Washington. Refiners are endeavoring, in every way possible, to ascertain the cost of production, because in making up income tax reports, the taxpayer has the right to inventory his products at market or at cost, whichever is the lower. It is easy enough to ascertain the market, because we have rather complete market reports in this country, and the market prices can be substantiated. To ascertain costs is an entirely different matter and one upon which a great deal of thought and effort has been spent.

Must Know Markets

The modern plant, operating efficiently and with an up-to-date accounting system, under competent supervision, will give a refiner the best which can be obtained in the production of products and in the proper accounting for same. This applies only to each particular plant.

If a company is to be successful, its management must know more than simply that company's own business. The management must know considerable about its competitors' business; must know about the oil business of the entire country; should know oil conditions of the world, and should know about general business conditions.

The refining members in our association are located principally in Pennsylvania, Ohio and West Virginia. The smaller refiners have a natural sales territory within a small radius from their plants. Their logical territory is comparatively near by to the refinery itself. The prices which can honestly be obtained for the different products of petroleum are governed by certain factors. One factor is the quality of the product. A product which is of better quality than a similar product made by others, will, naturally, bring a better price. Prices are also affected by the competition of other manufacturers, but without a clear conception of the stocks of materials available for distribution, the cost of delivering such products to the consuming points, and a knowledge of the delivered price by competitors, one cannot sell intelligently.

"Know your markets" is a good slogan for each of us.

A Pennsylvania or Ohio or West Virginia refiner may be a good refiner of oil in his particular state and know nothing about the conditions existing in the other two states, to say nothing of conditions in foreign countries. By his very zeal and ability to refine more and more oil in his particular state, without knowledge of what is going on in other states, he aids in bringing about a condition such as the present. We are all prone to give too much attention to the details of our own business, without proper consideration of what is going on about us.

Should Pool Statistics

If the members of this association would pool their statistics regarding the principal manufactured products, and if each member had promptly a summary of the data, it would go a long ways towards promoting better selling methods on the part of each of us.

Through the Department of Trade and Commerce, with group chairmen located at nine different cities, price information is now readily obtainable by each member, as each group chairman is in close touch with each member of his particular group, and is always in position to advise the member of his group of price and trade conditions. The group chairmen are in position to exchange information with each other, so that members can get trade information not only regarding their own group, but of the whole organization, by application to the group chairman. When you ask a group chairman for information, please give him all the information you can, so that our group chairmen will be kept posted on marketing conditions.

The position of the wax market is particularly interesting at this time, because the stocks of wax have been increasing steadily since 1924. Production is at a greater rate than consumption and, naturally, stocks have increased. Increased stocks mean lower prices, and wax is lower today than it has been in several years. Apparently, the buyers of wax have realized that large stocks of wax have been carried in this country, and by postponed buying have caused a very rapid and serious decline in the spot market price of wax. At this particular time, it appears that the matter of price decline has been overdone, as buyers are offering today a price below the cost of production of wax. It is about time for a reaction to set in, as wax should demand a higher price than the present buyers' market.

Not only have we been making more wax in this country than we have sold, but statistics show that we have been importing wax. In the year 1926 we imported 10,000,000 pounds of wax. In January, 1927, we imported 460,000 pounds and in February 2,048,000 pounds. With the lower prices prevailing for wax in this country, possibly the imports of wax will lessen.

Wax is cited merely as an illustration to show that the law of supply and demand does affect price. A temporary over-supply, or a temporary shortage of a product need not seriously disturb price, but continued over-production or continued shortage certainly does affect the price of a commodity.

It is highly important that the members of our association not only study the statistics put out by the Bureau of Mines and by others, but it would be very helpful if our members had prompt and reliable information as to statistics pertaining to this association.

Plan Proposed

The Department of Trade and Commerce is perfectly willing to undertake a collection of statistics for its members. The complete plan contemplates a weekly report from each member on stocks, production, shipments of gasoline, kerosene, gas, oil, fuel oil, viscous neutrals, steam refined cylinder stocks, filtered cylinder stocks, bright stocks and wax. If the members will furnish the data by mail each Saturday, as of the week ending on Friday, the Department of Trade and Commerce will tabulate such information on Monday and will mail out a recapitulation of same to each member on Monday night, so that the information will be available for each member on Tuesday. To some of us, this may be considered a radical step. We, in the oil industry, are prone to act slowly. We frequently miss real opportunities by procrastination. Some of us probably do not have the above information, except in a general way. The information, if compiled for each plant, will be invaluable to that plant, even though that particular plant may not know the situation in other plants, but the information would be far more valuable if it were combined and a true picture of the stocks, production and shipments of our entire association was before each member.

Possibly a complete report of stocks, production and shipments is too much to undertake just now. If it is your wish that we try to creep before we attempt to walk, then let us report to the Department of Trade and Commerce once a week, simply the stocks of the various products on hand, consisting of gasoline, kerosene, gas oil, fuel oil, viscous neutrals, steam refined cylinder stocks, filtered cylinder stocks, bright stocks and wax. If you will do this, you will receive each Tuesday, a recapitulation of the total stocks on hand for these various grades and you will know whether the stocks of our members are increasing or decreasing, and if increasing it will be natural to anticipate lower prices, but if decreasing, it will be natural to look for higher prices.

We stand ready to do the work, but in order to follow out either one of the plans successfully, it is necessary that we have the hearty co-operation of every member. No half-way measures will produce the results.

*Before National Petroleum Association, Cambridge Springs, Pa.

Drilling Restriction Or Unit Operation Cures, Says Teagle

Walter C. Teagle, president of the Standard Oil Co. of New Jersey, declared natural economic law, without legal compulsion, will bring about the two cures for the present overproduction situation —restriction of drilling for new oil and co-operative or unit operation of pools. The way is being opened for the latter cure, he said, by the Federal Oil Conservation Board in its recommendation of a policy of conservation through co-operation between government and industry and among different units within the industry. His statement follows:

"Speaking before the Federal Oil Conservation Board at the public hearing held in Washington, D. C., on February 10, 1926, I closed my remarks on the subject assigned to me, 'Fuel Oil and Its Influence on Conservation,' with these words:

" 'The simultaneous development of a number of new fields, resulting in a sudden and very considerable increase in our crude production, would admittedly check this economic trend toward conservation and would retard, for the time being, the further extension of cracking facilities. A flood of oil is always a possibility, and in such a contingency it would seem to be in the public interest that co-operative efforts by units of the industry to lessen so far as possible such overproduction and present uneconomic use should be permitted.'

Abnormal Conditions

"In expressing this thought I was not assuming to prophesy. In an experience in the oil industry covering more than a quarter of a century, I have learned that periods of overproduction are recurring phenomena, and I therefore recognized the fact that under such abnormal conditions the play of the natural economic laws to which I have referred would not be effective.

"The report of the Federal Oil Conservation Board recommended the policy of conservation through co-operation between government and industry and among different units of the industry. To quote the language of the report:

" 'The major part of the measures that must be taken to protect our future supplies must rest upon the normal commercial initiative of private enterprise. The field for governmental action is considerable, but to formulate the broader bylaws of the industry in the sense of conservation and to concentrate thought upon them is the major part of the board's task in co-operation with the industry.'

"I believe that every oil man wants real conservation. It is the hope of every producer that he may some time own enough acreage in one block so that he can produce oil in an economic way, and not because of the pressure of competition of other operators who will drain the oil from under the leases if he does not produce it himself.

"The situation today lends particular force to the recommendation of the Conservation Board that there should be, subject, of course, to law, arrangements among operators making it possible to curtail unnecessary drilling. The education of the industry, and especially that part of it represented by the producing fraternity, has progressed rapidly under the stimulus of the experience in the Seminole Pool, with the result that we have today, I believe, a much more favorable and sympathetic attitude for realization of the board's policy of conservation.

Measures for Conservation

"Measures for the conservation of our petroleum supplies, through more sane drilling, would undoubtedly have been taken ere this, had not producers in the big flush fields been apprehensive about undetraking to co-operate in any form of unit operation. In such a situation it is interesting to note the suggestion made by President Coolidge's Conservation Board as to the necessity of clarifying the rights of operators under the law and of promoting better co-operation between the Government and the industry and among the units of the industry itself.

"The industry is now, I am sure, sufficiently impressed with the necessity of conservation, and if the way is opened to it it will, in its own self-interest, as well as in the national interest, proceed more effectively along the line of avoiding these abnormal periods of overproduction and of conserving petroleum for future use."

ROCKY MOUNTAIN AREA

(Continued from Page 53)

instructions with the bottom at 2,800 feet.

The Stevenson interests, drilling what is known as the Bears Den wildcat, northeast of the Sunburst Field and east of the Sweetgrass Hills, opened a heavy gas flow the past week at 1,010 feet and the well is estimated good for 1,000,000 feet.

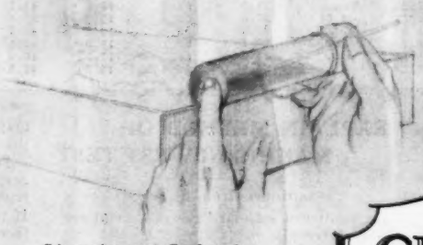
The Dakota Montana Oil Co.'s well on the Wilcox lease was brought in last week in the Ellis sand at 1,475 feet and started off at 500 bbls. The Ohio Oil Co.'s well on the Putnam came in good for 1,000 bbls. from the Ellis sand and made the best completion of the week. Four other wells completed in Sunburst were little better than dusters.

Runs From the Fields

Wyoming	
Salt Creek	49,080
Teapot	1,300
Big Muddy	2,740
Grass Creek	2,730
Elk Basin	720
Greybull	20
Rock River	2,900
Rex Lake	180
Lance Creek	730
LaBarge	120
Poison Spider	150
Osage	330
Hamilton Dome	1,220
Lander	80
Byron	50
Lost Soldier	3,780
Simpson Ridge	60
Ferris	70
Montana	
Cat Creek	2,360
Lake Basin	190
Sunburst	12,500
Colorado	
Walden	145
Florence	700
Moffat	2,205
Fort Collins	3,320
Tow Creek	960
Boulder	25
Rangeley	100
New Mexico	
Rattlesnake	3,505
Table Mesa	No runs
Hogback	760
Artesia	1,900
Total	94,930

PETROLEUM STORAGE ABROAD

The French Ministry of Colonies has sent to the various governors instructions as to local regulations for petroleum stores. Moderately lenient rules are enforceable as regards tanks with a capacity of 400 meters, except underground tanks, because of explosion risks. Distance between tank and next building or public way must not be less than the tank diameter; tank must be surrounded by some kind of basin capable of retaining all contents in case of explosion or serious leak; foam fire extinguishers should be made compulsory.



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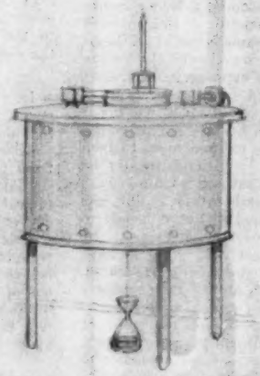
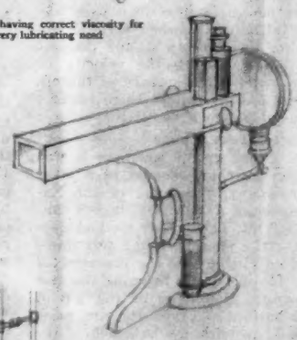
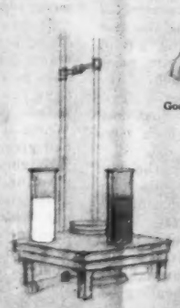


A grade having correct viscosity for every lubricating need



Good color—Crown Oils look pure and are pure



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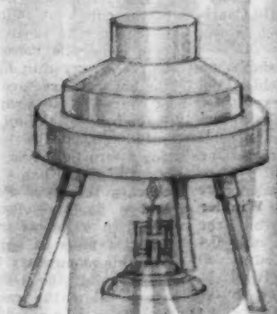

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WEST TEXAS FIELDS ARE NOT A MENACE

(Continued from Page 29)

Pool. The highest, however, was No. 5 J. T. McElroy, which flowed 5,000 bbls., and the lowest is No. 1 J. T. McElroy-B, on the east edge of the pool, which swabbed 175 bbls. last week. This test, the lowest structurally in the pool, was more than a mile east of the main pool and virtually proved up all of the intervening territory.

Various factors have combined to curtail operations in the Crane-Upton district, of course, such as inadequate pipe line outlets, and the low price of the product, but these same circumstances have not deterred operators in other places. Unit control by Gulf Production Co. has helped keep the McElroy oil off the market but even in the Church-Fields Pool, as pointed out previously, only two inside wells are drilling.

Winkler Operators Curtailing

In Winkler County, where the acreage is cut up into relatively small pieces, operators are likewise holding off and dozens of locations which would ordinarily be tested because they look extremely good are now idle through mutual understanding. The Texon Oil & Land Co. is drilling one well one-half mile east of the Gulf Production Co.'s No. 1 Hendricks which flowed at the rate of 180 bbls. an hour and actually tanked 2,092 bbls. in 12 hours before it had to be pinched in. The Gulf is protecting itself with an offset, No. 6, and is drilling another well, No. 4, to the top of the lime where it will be shut down; Southern Crude Oil Purchasing Co., which owns the discovery well, is completing its No. 1-C and No. 2-C and is drilling No. 3-C to the top of the lime offsetting Gulf's No. 4 and will likewise shut it down. Independent Oil & Gas Co. is completing its west offset to the discovery and is drilling an offset to the Gulf and Southern tests which is scheduled to go only to the lime at present, like the other two. That sums up the development around a 4,000-bbl. well of 29.1-degree gravity oil.

Pecos a Big Factor

Pecos County is probably capable of making more overproduction trouble in a short time than any other part of west Texas, or would be if conditions were different. The proven area in the Yates Pool is already about three-quarters of a mile long, on one end of which there is a 7,000-bbl. phenomenon with an uncompleted test already good for more than 700 bbls. on the other. These wells are just 1,000 to 1,200 feet deep. According to geologists who have studied the surface structure, the area in which production can reasonably be expected because of surface indications extend nearly 11 miles northwest and southeast and widens out in an eliptical shape to a width of nearly 5 miles northeast and southwest. It extends from near the Texon-Kimberlin producer to the Runnels County school land. If only half of this area proves productive the Yates Pool will still be enormous. Yet there are just four drilling wells within that area. Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co., owners of the pool, are drilling one semi-wildcat to the northwest, three-quarters of a mile from production, another to the east, one-half mile from the nearest well, and a third on the discovery tract. George A. Henshaw, Jr., who is well known for his $2,000,000 sale in Brown County early this year, is drilling the fourth well in Section 544 about half way between the Yates Pool and the Texon well.

As mentioned last week, this field cannot affect the market situation as long as nothing but a 6-inch line serves as an outlet for the crude.

Upton County Situation

The southeastern trend of production in Upton County holds forth some promise and two wildcats are seeking further extensions in that direction, one of them being over the line in Crockett County. This is George A. Henshaw, Jr.'s test on the Smith farm in the C SW Section 5, Block B-14, University land. The other is Simms Oil Co.'s No. 1 Clark, NE cor. SW, Section 5, G. C. & S. F. Survey, about a mile north of the Upton-Crockett line and approximately 4 miles west of the Henshaw test.

Both of these look promising as this is written. The Henshaw well topped the salt at 450 feet with surface elevation of 2,297 feet and had the lime at 1,695 feet or 602 feet above sea level, which is high. It had a hole full of sulphur water at 1,725 feet but was drilling ahead around 1,900 feet. The Simms well found the top of the salt at 405 feet, or 198 feet higher structurally than the Henshaw test. All of the territory between the Prairie Oil & Gas Co.'s new 500-bbl. extension, No. 1 Lane-C, in Upton County, and the Yates Pool in Pecos County, is receiving warm attention and is expected to provide several new pools. But the activity, at present, is confined mostly to acreage purchases, largely in the form of protection. Companies who find themselves unprotected in good looking areas along the Winkler to Pecos County trend are doing considerable buying but it is of a character that has very little to with immediate development. Prices have not declined to any extent, as yet, and in some places along this trend have actually gone up since the last general crude price cut.

Wildcatting Campaign

The accompanying map shows that the wildcatting campaign in West Texas is decidedly limited at this time. Winkler County leads with eight rank wildcats, Loving County has a couple, Upton County has four and Ward County one. Ector County contains only one drilling well and one rig, both of which are near Cosden's lone producer. Crane County is represented in the wildcat list only by the Gulf Production Co.'s core test on the Waddell Ranch. Pecos County, which spreads over more than 2,000,000 acres and is 75 or 80 miles wide from the Yates Pool to the Reeves County line, has a dozen or so active tests.

Analyses of West Texas crudes given in the accompanying table show another reason why West Texas crudes will not be a market factor as long as "sweet" crudes of the high gravity Mid-Continent areas can be had in such abundance.

The highest sulphur content shown on the list is in the Church-Fields Pool where the percentage is 2.56, except for the Westbrook Field of Mitchell County. Among the important West Texas pools shown on the accompanynig map, the Yates Pool and the Gulf-McElroy are second and third. Upton County crude averages about 2.0 per cent, Winkler County 1.5 to 2.0 per cent, while the lowest is Big Lake Field with only 0.4 to 0.75 per cent. Crockett County oil from the World Pool is next to Big Lake in this respect, having only 0.6 to 0.9 per cent sulphur.

The analyses given in the accompanying table are, in some cases, analyses of representative samples from the various fields but in other cases are taken from one well only. However, all are close to the average in their particular area.

COMPARATIVE ANALYSIS OF WEST TEXAS CRUDE OILS

Pool—	Gravity A.P.I.	Sulphur % Wgt.	Atmospheric Distillation: Gasoline to 392	Gravity	Kerosene to 527	Gravity	Vacuum Distillation: Gas Oil to 437	Gravity	Residuum %	Residuum Gravity
Crane County, Church-Fields	31.6	2.56	29.3%	55.7	16.3%	40.0	6.6%	32.3	....	....
Crane County, Gulf-McElroy	32.6	2.23	29.3	59.8	18.0	40.4	8.6	32.6	....	....
Crane County, The Texas Company 1-F.	31.0	1.00	....	....	....	....	....	....	....	....
Upton County, Hughes	28.3	1.90	25.1	55.0	3.0	42.0	6.0	38.9	65.3	19.6
Upton County, Estep	32.2	1.95	26.2	57.1	1.6	42.1	7.4	39.0	64.2	22.1
Upton County, Bowen	30.2	1.83	22.1	57.3	3.3	42.1	6.6	39.0	67.4	21.6
Pecos County, Yates	28.9	2.275	21.0	54.7	17.4	38.8	8.7	29.5	....	....
Winkler County, Discovery	28.8	2.07	22.5	....	....	....	....	....	....	....
Winkler County, Discovery	27.3	1.85	19.6	52.6	18.6	38.4	10.4	29.0	....	....
Winkler County, Gulf's No. 1	29.1	1.49	22.4	....	....	....	....	....	....	....
Big Lake Field	37.5	0.40	34.0	59.7	14.0	38.8	18.75	35.9	....	....
Crockett County, World Pool	29.1	0.846	17.7	53.4	16.9	38.6	10.1	34.0	....	....
(Roxana well)	31.9	0.58	21.2	55.2	....	....	13.4	39.0	64.8	24.1
Ector County, Cosden 1-A	35.2	1.21	33.3	56.3	17.3	41.3	11.0	33.6	....	....
Garza County	37.3	Trace	35.3	57.9	16.6	40.1	8.3	....	....	....
Mitchell County, Westbrook	25.7	2.68	27.3	55.5	13.3	35.5	9.0	28.0	....	....
Howard County, Chalk	31.8	0.88	25.1	58.0	16.0	40.7	10.1	34.5	....	....
Chalk	35.1	1.097	23.3	57.1	19.0	41.8	8.7	35.3	....	....
Fred Hyer	31.3	....	22.3	57.7	17.33	40.0	11.66	29.5	....	....
Owen Sloan	33.2	....	23.66	56.5	16.34	41.5	12.66	33.4	....	....

Pool—	Average Depth	Average Initial Production	Range of Initial Production
Church-Fields	2,875-3,050	1,183	40 to 9,000
Gulf-McElroy	2,700-2,900	1,160	175 to 5,000
Upton County	1,950-2,350	275	10 to 3,000
Pecos-Yates	1,000-1,200		700 to 7,000
Winkler County	2,542-3,049		355 to 4,000

EXPLAIN METHOD OF MAKING NEWEST TEST

(Continued from Page 33)

ing against a standard instrument at regular intervals.

Standard Test

We have decided on a cup of definite size and shape. By doing this, we insure having the same amount of oil in each test, we have the same amount of heating surface and we have the same evaporation surface exposed in each test.

We have specified no distinct type of burner for the flash test, yet we insist on a uniform rate of heating. This would appear to leave the method open to considerable criticism. Criticism would be justified here if the same gas supply were available at each laboratory. The gas supply varies so greatly that it is left to each individual operator to select the type of burner which will give the best heat and which is the easiest regulated. In taking flash tests on the Pennsylvania 650 and 700 fire test stocks, it is practically impossible to control the rate of heating so as to conform to specifications.

When we attempt to force a burner to secure the necessary heat in a case like this, we introduce another error. We are creating air currents around the test aparatus which disturb the velocity of the vapors leaving the surface of the oil. The remedy for this would be to connect the burner shield to a ventilator.

Test Flame

In one of our group meetings it was stated that the chief chemist of a large refining company, a member of the National Petroleum Association, insists that the A. S. T. M. flash point method does not call for the passing of the test flame from rim to rim across the diameter of the cup. He insists on bringing the test flame down to the plane of the top of the cup a half-inch in from the rim, passing it across to within a half-inch of the other rim and raising it vertically from the cup. The method as published does not state that test flame cut both rims of the cup in its sweep.

His reason for not touching the rim of the cup is as follows: The oils have a tendency to creep up the sides of the cup, some oils more than others. This leaves a very thin film of oil exposed to the hot metal surface. The heat transfer, of course, is more rapid than through the main body of the oil and overheating results. When the test flame is brought down into the plane of the top of the cup the tip of the flame a great many times touches this thin film of overheated oil and a flash results. This flash takes place in a downward direction. When the test flame is applied in this manner and this momentary ignition taken as the flash point, the result is 10 to 15 degrees below the results obtained when the flame is applied a half-inch in from the rim.

Our standard method of test states that the appearance of a flash at any point on the surface of the cup shall be taken as the flash point. This flash may occur at the edge of the cup or at the center.

It is my opinion that unless the flash covers the entire surface of the cup the true flash point has not been reached. If the flash does not cover the entire surface of the cup it means that the vapors are not being equally driven off over the cup. If they are not driven off equally over the cup there is overheating taking place at some point. This is contrary to the basic idea, which brought about the development of this test.

Definition of Flash

In view of the above mentioned criticisms, the writer thinks that the following definition, a modification of Redwood's, defines more exactly the actual flash point of an oil.

"The flash point of an oil is the empirical temperature at which the vapor concentration reaches the point where it will ignite momentarily on the introduction of a flame or spark, when the oil is heated at a given rate, in an apparatus of given construction and dimensions so designed that localized overheating does not take place, and a definite igniting agent is applied in a given manner."

NORTH TEXAS MARKET SHOWS IMPROVEMENT

WICHITA FALLS, Tex., May 2.—A slight improvement in the north Texas refined market was the manner in which most refiners and marketers summarized the situation for the past week, with Fort Worth refiners more active in the gasoline market than Wichita Falls refiners. Inquiries for U. S. Motor gasoline over May were brisk during the closing days of last week but no big sales were reported.

It was pointed out by refiners that reduced runs and the filling of export contracts had left but little gasoline available in the territory. For the past few days the market has been slow with only a fair movement of gasoline. In Fort Worth it appeared better. Ideal weather had given the spot trade an increase and throughout the week the movement of gasoline was considered better than fair.

Business Monday started off in a manner which characterized the buying of gasoline during the past week. Refiners are still making a determined effort to hold U. S. Motor gasoline at 6¼ to 6½ cents. Some gasoline was sold at 6 cents. A large offering of that material at 6 cents in other areas gave refiners a none too promising outlook for a stronger tone in the market.

Grades AA and A strengthened and advanced one-quarter cent. This strength was due principally to the heavy buying of AA by buyers who were active in that market throughout the entire week. The remaining grades were dragging.

Kerosene maintained a stronger tone all week and was up fractionally. Its movement has been fairly steady and started the week off movement steady. A good-sized order for the product for May delivery strengthened kerosene early last week.

Fuel oil was sluggish and little was moved with another fractional reduction in price. Some fuel oil, for delivery over May, was sold for 5 cents under the generally accepted price. Gas oils and distillates remained in a slump and were a shade weaker.

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C·F·BRAUN & CO·MANUFACTURING MECHANICAL ENGINEERS

ALHAMBRA, CALIFORNIA

NEW YORK·DALLAS·TULSA

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

Empire G. & F. Co.'s No. 1 C. R. Garner..... Set 8-in. casing 2,250 ft.; drilling 2,690 ft.

Empire G. & F. Co.'s No. 2 M. P. Co. fee-A, NE cor. SW Sec. 91, Blk. 4..... Top lime 2,278 ft.; top pay in lime and granite wash 3,030 ft. to 3,158 ft., flowing 200 bbls. a day; drilling deeper.

Empire G. & F. Co.'s No. 3 M. P. Co. fee-A, SE cor. SW Sec. 91, Blk. 4 ..... Drilling 2,851 ft.

W. A. Gamble's No. 1-A John Dies, 30 feet N of cen. Lot 7, Blk. 11, Panhandle Townsite, Sec. 69, Blk. 2, T. T. R. Sur. ..... Driving 15-in. 330 ft.

Gulf Prod. Co.'s No. 1 Noel, SE cor. SW Sec. 198, Blk. 3... Top pay 3,162 ft.; show of oil 3,240 feet, sandy lime, spraying 20 bbls. hard granite wash 3,327 ft.

J. K. Hughes Developing Co.'s No. 2 F. E. Percival, NW cor. E half NW Sec. 199, Blk. 3..... Drilling 2,210 ft.

Marland Oil Co.'s No. 1 Burnett-J. C NE NE Sec. 121, Blk. 5 ..... Shut down 2,900 ft.

Marland Oil Co.'s No. 2 C. R. Garner, Sec. 198, Blk. 3... Drilling 2,800 ft.

Marland Oil Co.'s No. 1 J. L. Noel..... Setting 8-in. casing 3,060 ft.

Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.... Shut down 2,000 ft.

Republic Prod. Co.'s No. 1 Burnett, Sec. 116, Blk. 4..... Topped pay lime 3,109 ft.; 600 ft. oil in hole; fishing for bailer 3,206 ft.

Roxana Pet. Corp.'s No. 1 Brown, Sec. 106, Blk. 4..... Run 6-in. 2,985 ft.

Skelly Oil Co.'s No. 2 H. Schafer, NW cor. NE Sec. 87, Blk. 4 ..... Rigging up cable tools top pay 2,740-96 ft.

Skelly Oil Co.'s No. 3 H. Schafer, NW cor. NE Sec. 86, Blk. 4 ..... Flowing 20 bbls. per hour 3,120-60 ft.; drilling deeper.

Skelly Oil Co.'s No. 4 Schafer, NW cor. Sec. 86, Blk. 4.... Set 6-in. 3,133 ft.

Stubblefield et al's No. 1 E. Cooper, SW cor. NE Sec. 5, Blk. 9, I. & G. N. Sur. ..... Rigged up and shut down.

Vitek Oil Co.'s No. 1 J. H. Eller, NE cor. NW Sec. 200, Blk. 3 ..... Rig up and shut down.

Vitek Oil Co.'s No. 1 C. R. Garner, SW cor. Sec. 113, Blk. 4, I. & G. N. Sur. ..... Drilling 1,500 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemons, SW cor. Sec. 78, Blk. M-17, B. S. & F. Sur..... Rig.

Gulf Prod. Co.'s No. 1 Clements, SW cor. Sec. 27, Blk. M-10-A, Sealy & Morris Sur..... Total depth 1,505 ft.; underreaming 8-in. to 1,490 ft.; water sand 1,435-50 ft.; total depth 2,055 ft; U.R. 8-in., 2,405 ft.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE Sec. 333, Blk. M-6, S. K. & K. Sur..... S.D. 510 ft. for casing.

CHILDRESS COUNTY

Brookins et al's No. 1 Mrs. Givens, 600 feet N and W of SE cor. Sec. 676, W. & M. W. Sur..... Spudded and shut down.

Hoover & Calloway's No. 1 O. L. Tucker ..... Cellar.

C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... Fishing 1,300 ft.

COLLINGSWORTH COUNTY

Harmon & Deems' No. 1 Wilson (Scott), Sec. 44, Blk. 21.. Location.

Wischkamper's No. 1 fee, C SE Ser. 93, Blk. 16..... Drilling 2,312 ft.

DALLAM COUNTY

James et al's No. 1 fee, Sec. 9, 47½..... Fishing 2,870 ft.

Harry Skelly et al's No. 1 Capitol Synd., Sec. 19, Blk. 17.. Running 10-in. to 2,420 ft.

Marland Oil Co. et al's No. 1 Capitol Syndicate, Sec. 36, Blk. 18, Capitol Syndicate land..... Shut down 950 ft.

DEAF SMITH COUNTY

Julian & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-8..... Shut down 520 ft. for casing.

Red Hill Oil Corp.'s No. 1 Barrett, Sec. 93, Blk. K-4..... Shut down 710 ft.

DONLEY COUNTY

A. T. Drilling Co.'s No. 1 F. E. Harington, Sec. 39, Blk. 3-C ..... 1,200 ft. water from 3,115-22 ft.; show gas 3,140-60 ft.; dry granite wash 3,260-93 ft.; shut down for orders.

GRAY COUNTY

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B.. Spudded and shut down.

Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25..... Drilling 870 ft.

Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B ..... Total depth 2,666 ft.; gas shut in and work suspended.

Blackwell & McGee's No. 1 Bowers, Sec. 92, Blk. 2-B.... Flowing 65 bbls. and 9,000,000 ft. gas from granite wash 2,965-74 ft.; drilling 3,010 ft.

British-Amer. O. Co.'s No. 1 J. E. Meers, Sec. 107, Blk. 3.. 58,000,000 ft. gas and slight spray oil; fishing bit 3,190 ft.

British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 ..... Rigged and shut down.

Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17, Blk. 1..... Shut down 3,505 ft. for repairs.

Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 ..... Rig.

Edwards et al's No. 1 E. J. Case..... Building rig.

Empire G. & F. Co.'s No. 1 W. C. Archer, SW cor. NE Sec. 174, Blk. 3..... Running 6⅝-in. to 3,158 ft.

Empire G. & F. Co.'s No. 1 J. F. Meers, NE cor. SE Sec. 107, Blk. 3 ..... Pulling big pipe 2,550 ft.

Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3.... Total depth 2,930 ft.; shut down; 43,000,000 ft. gas; closed in.

Empire G. & F. Co.'s No. 1 Webb, SW cor. Sec. 59, Blk. 25 ..... Show of oil 2,457 ft.; drilling 3,276 ft.

Foster et al's No. 1 G. Cutebank, SW cor. NE Sec. 65, Blk. 25 ..... Drilling 2,260 ft.

Gray County Pet. Co.'s No. 1 Herndon, Sec. 147, Blk. 3... Shut down 2,405 ft. for water.

Gulf Production Co.'s No. 1 J. M. Saunders, Sec. 40, Blk. 3 ..... Fishing for bailer 3,138 ft.; 1,750 ft. oil in hole.

Humble O. & R. Co.'s No. 1 T. B. Haggard, SW cor. Sec. 112, Blk. 3..... Sandy lime 3,159-3,230 ft.; swabbed 105 bbls. a day.

John G. Lane's No. 1 A. Chapman, Sec. 19, Blk. A. C. & H. B. Sur. ..... Total depth 3,300 ft.; 5 3/16-in. casing parted; now pulling.

Neudigate et al's No. 1 A. Chapman, NE cor. E ½ SE Sec. 52, Blk. 25..... Set 12¼-in. 225 ft.

Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3... Fishing for 15⅛-in. pipe 420 ft.

Pampa Pet. Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3... Shut down 3,450 ft.; 1,500 ft. of water from 3,320-60 ft.

Purple Sage Oil Co.'s No. 1 Johnson, Sec. 8, Rockwell County school land..... Shut down 2,300 ft. for orders.

Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B.... Shut down 2,900 ft.; rig burned, rebuilding rig.

Rensoul Pet. Co.'s (was Salisbury & Reynold's) No. 1 M. Huselby, C SE NE NE Sec. 55, Blk. 25, H. & G. N. ..... Shut down 500 ft. broken beam.

C. B. Shafer's No. 1 G. Cole, SE cor. W ½ SW Sec. 105, Blk. 3 ..... Drilling 2,526 ft.

The Texas Company's No. 1 J. B. Barrett, NE cor. NW NW Sec. 130, Blk. 3..... Drilling 2,561 ft.

The Texas Company's No. 3 Saunders, C E ½ Sec. 3, B. & B. Sur. ..... 11,000,000 ft. gas 2,395-2,415 ft.; shot 120 quarts 2,550-80 ft.; cleaning out; 13,000,000 ft. gas at 2,535 ft.; recementing 6⅝-in. casing.

Travis et al's No. 1 J. Back, Sec. 44, Blk. 25..... Flowing 10 bbls. per hour 2,845 ft., cutting 10 per cent water, running 6⅝-in. casing.

J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 ..... Rig blown down.

HALL COUNTY

Seifert and others' No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. ..... Spudded and shut down.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 27, Blk. 16..... Drilling 3,400 ft.

Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 ..... Shut down 2,483 ft.

Eslick et al's No. 1 J. B. Irving, Sec. 13, Blk. 13..... Shut down 2,900 ft.

J. E. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS..... Shut down 3,500 ft.; contract depth.

J. E. McKanna's No. 1 Frances Farwell, Sec. 30, Blk. 22.. Shut down 1,080 ft.

J. E. McKanna's No. 1 J. M. Shelton estate, Sec. 29, Blk. 202 ..... Drilling 3,582 ft.

HEMPHILL COUNTY

A. J. Calhoun's No. 1 J. C. Isaacs, Sec. 189, Blk. C..... Spudded and shut down.

Hoover et al's No. 1 Schaller estate, Sec. 4..... Spudded and shut down.

Hoover et al's No. 1 fee, J. S. Hood Sur..... Small show oil and gas 4,027 ft.; hole full water in sandy lime 4,005-10 ft.; shut down 4,380 ft.

HUTCHINSON COUNTY

Anderson & Pritchard's No. 1 Yake, Sec. 1, Blk. J..... Total depth 3,005 ft.; plugged back to 2,795 ft.; rig burned while trying to shoot.

Berryman Oil Co.'s No. 1 Sanford, Sec. 83, Blk. 46, H. & T. C. Sur. ..... Fishing at 2,707 ft.

Conklin et al's No. 1 Johnson, Sec. 1, Blk. XO3, H. & O. B. Sur. ..... Shut down at 670 ft.

Great Plains Oil Co.'s No. 1 Lee Bivins, Sec. 13, Blk. Y2, T. T. R. R. Sur. ..... Underreaming 10-in. casing 1,320 ft.

Great Plains Oil Co.'s No. 1 Kingland, Sec. 4, Blk. Y ..... Spudding.

Dominion Oil Co.'s No. 1 Jasper, Sec. 23, Blk. M-23..... Shut down 3,137 ft. for storage.

Golden Eagle Oil Corp.'s No. 1 J. Q. Bost, Sec. 6, Blk. Y-2 ..... Derrick.

Marland Oil Co.'s No. 1 Carver, William Heath Sur. ..... Spraying 15 bbls. salt water from 3,270-97 ft.; drilling 3,435 ft.

Panfield Oil Co.'s No. 1 Luginbyhl Brothers, Sec. 50, Blk. M-23 ..... Shut down 1,200 ft.

Pole Cat Oil Co.'s No. 1 W. B. Haile, Sec. 24, Blk. M-21... Rig.

Phillips Pet. Co.'s No. 1 Yake, Sec. 36, Blk. 46..... Fishing 1,960 ft.

Phillips Pet. Co.'s No. 1 Garland, Sec. 77, Blk. 46, H. & T. C. Sur. ..... Set 6-in. at 2,650 ft.; shut down 2,961 ft., show of oil.

Prairie Oil & Gas Co.'s No. 1 J. M. Sanford, SW cor. N half Sec. 85, Blk. 46 ..... Rig.

Prairie Oil & Gas Co. and Vacuum Oil Co.'s No. 1 Cal Merchant ..... Drilling 850 ft.

Sweeney et al's No. 1 Johnson, Sec. 38, Blk. Y ..... Drilling 1,780 ft.

U. S. Oil Corp.'s No. 1 Johnson, Sec. 35, Blk. Y ..... Shut down 650 ft.

Vitek Oil Co.'s No. 1 W. F. Allen, Jose Rodriguez Sur..... Shut down 180 ft.

LIPSCOMB COUNTY

Camp Creek Oil Co.'s No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 ..... Rigging.

McCorkle's No. 1 A. Barton..... Fishing 3,760 ft.

Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW Sec. 100, Blk. 43 ..... Pipe trouble 1,150 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44.. Making 34,000,000 ft. gas; drilling 3,300 ft.

Douglas Oil Co.'s No. 1 H. M. Beauchamp, Sec. 112, Blk. 44 ..... Underreaming at 2,875 ft.

Marland Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1... Shut down 3,202 ft.; one-half bailer water per hour at 3,152-3,202 ft.

Humble O. & R. Co.'s No. 1 Kilgore, Sec. 28, Blk. 44..... Total depth 3,867 ft.; plugged back to 3,750 ft.; shut down.

Morton & Co.'s No. 1 Reeder, Sec. 191, Blk. 3-T..... Killed gas; cleaning out at 2,856 ft.

Phillips Pet. Co.'s No. 2 Special Sneed..... Set 8-in. casing at 2,700 ft.

Moore County Oil Co.'s No. 1 Sneed, Sec. 30, Blk. 6-T.... Drilling by tools 1,970 ft.

Shadler Brothers' No. 1 John Lowery, Sec. 237, Blk. 44... Shut down 1,365 ft.; 12½-in. casing froze.

Skelly Oil Co.'s No. 1 Armstrong & Byrd..... Rig.

Prairie and Shamrock's No. 1 Gober, Sec. 16, Blk. M-21.. Total depth 1,120 ft.; to skid rig.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43..... Running 5-in. to 3,200 to cut off salt water; total depth 3,830 ft.

Hamilton et al's No. 1 R. E. Wamble, Sec. 144, Blk. 43.... Shut down 260 ft.

McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... Shut down 1,600 ft.

McCorkle's No. 1 Weinett, Sec. 574, Blk. 43..... Rig; spudded and shut down.

Standard Dev. Co.'s No. 1 Bowden, Sec. 923, Blk. 43..... Shut down 900 ft.

OLDHAM COUNTY

Prairie O. & G. Co.'s No. 1 Landergin, SE cor. NE SW Sec. 46, League 310, Capital land..... Drilling 3,285 ft.

PARMER COUNTY

Humble O. & R. Co.'s No. 1 Farwell, elev. 4,005 ft ..... Drilling 1,758 ft.

POTTER COUNTY

Greater Amarillo Pet. Co.'s No. 1 Townsite, Sec. 167, Blk. 2, A. B. & M. Sur..... Shut down 2,020 ft.; temporarily abandoned.

Farmer O. & G. Co.'s No. 1 J. A. Jones, Sec. 3, Blk. 1.... Shut down 200 ft.; temporarily abandoned.

Kelmey Oil Co.'s No. 1 W. H. Rush, Sec. 12, Blk. 9..... Rig; temporarily abandoned.

RANDALL COUNTY

Patterson et al's No. 1 Campbell & McIlroy, NE cor. Sec. 60, Blk. K-14, T. T. R. R. Sur..... Spudded and temporarily abandoned.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A ..... Shut down 4,910 ft. for material.

Dunbar's No. 1 H. A. Gill, Sec. 127, Blk. M-2..... Cellar; temporarily abandoned.

Gibson Oil Corp.'s No. 1 T. S. Jones..... Salt water 4,143-60 ft.; fishing 4,220 ft.

Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2..... Shut down 650 ft.

Charles Page et al's No. 1 Hamilton, Tract 2, Clay County school land ..... Shut down 440 ft.

C. C. Wilson, No. 1 A. H. Tandy, NE cor. Sec. 182, Blk. 42, H. & T. C. Sur. ..... Location.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk 5-B..... Shut down 1,200 ft.

Hagy & Harrington's No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T, T. & N. O. Sur..... Digging cellar.

Phillips Pet. Co.'s No. 1 Price & Fuqua, C NE Sec. 33, Blk. 2-B, G. H. & H. Sur..... Location.

Whitehead et al's No. 1 Lee Bivins, C SW Sec. 36, Blk. 3, G. H. & H. Sur..... Location.

SWISHER COUNTY

R. H. Miller's No. 1 Todd..... Location temporarily abandoned.

WHEELER COUNTY

American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13 Shut down 2,029 ft.; 8,000,000 ft. gas, show of oil 2,027 ft.

Angus et al's No. 1 G. A. Morgan, SW cor. SW NE Sec. 93, Blk. 17..... Shut down 950 ft. for rig repairs.

Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24... Fishing for bit 2,400 ft.

Continental Oil Co.'s No. 2 J. H. Jackson, SE cor. NE Sec. 11, Blk. 27..... Preparing to abandon 2,378 ft.

Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur..... Spudded and shut down.

Lone Star Gas Co.'s No. 1 C. A. Linkey, C NW SE Sec. 129, Blk. 23..... Making 2,000,000 ft. gas 1,734 ft.; drilling ahead.

Lone Star Gas Co.'s No. 1 R. S. Alexander, NE NW Sec. 11, Blk. 27..... Underreaming 8¼-in. 1,250 ft.

Marland Oil Co.'s No. 2 W. E. Bentley..... Show gas 2,205 ft.; drilling ahead.

North Texas Oil Co.'s No. 1 J. H. Jackson, NE NW Sec. 11, Blk. 27..... Drilling 2,051 ft.

J. J. Rook's No. 1 M. Mertel, SE NE Sec. 4, Blk. 24, H. & G. N. Sur..... Set 15½. in 465 ft.

J. J. Rook Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 34..... Fishing casing 1,300 ft.

J. J. Rook's No. 1 C. W. Porter, SW cor. NW Sec. 41, Blk. 24 ..... Shut down 2,205 ft.; rolling flues.

Wheeler O. & G. Co.'s No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 ..... Spudded and shut down.

Smith, Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A ..... Shut down 2,000 ft. for orders.

E. L. Woodley, Jr., No. 1 Woodley, Sr., Sec. 13, Blk. 5-A.. Fishing bailer 2,235 ft.

Watchorn O. & G. Co.'s No. 1 F. E. Shelton, C NE NE Sec. 32, Blk. 24..... Drilling 1,670 ft.

RESEARCH SHOWS ADVANTAGE OF GREATER VOLATILITY IN GASOLINE

By M. E. Foster
Assistant Sales Manager, Phillips Petroleum Co.

A great deal of research work has been done in the past year or two on the volatility of motor fuels.

The co-operative research on motor fuels conducted by the Bureau of Standards under the guidance of the American Petroleum Institute, the Society of Automotive Engineers and the National Automobile Chamber of Commerce is possibly the most comprehensive program. The work of Drs. G. G. Brown and E. H. Leslie at the University of Michigan for the Association of Natural Gasoline Manufacturers is a close second, if not first, in interest of the subject under discussion. Also, T. A. Boyd of the General Motors Research Corp., his associates, and various others have been working on the subject of volatility of motor fuels.

The results of this work has been given wide publicity through the various trade journals. A study of these results shows that all of these men are unanimous on the following points:

(1) That a more volatile gasoline is needed in winter than in summer; a more volatile gasoline is needed in the northern than in the southern states to give satisfactory operation.

(2) That the more volatile gasoline has less tendency to knock.

(3) That within reasonable limits there is no loss in power, or mileage, in more volatile gasoline.

(4) That ease of starting and satisfactory acceleration depends primarily on the volatility of the first 30 per cent of the distillation and not the average volatility of the whole curve. Or, putting it another way, the last 70 per cent of the distillation curve has little or no effect on starting and acceleration.

Proof of Contentions

In support of the above facts, the following quotations are offered.

"One of the outstanding features of these tests was the remarkable consistency with which the operators rated fuels, based largely on the ease of starting. Although this result is qualitative rather than quantitative, it indicates clearly that relatively small apparent differences in the starting are readily apparent in actual service."

"One conclusion, which is substantiated by all the results obtained, is that the first 20 per cent distilled is the portion most closely associated with engine starting."

"The fuel requirements for engine starting are shown to depend largely on the temperatures anticipated in service."

"Two points on the standard A. S. T. M. distillation curve"—5 per cent and 20 per cent—"seem to be an adequate means of specifying the fuel to meet given" (starting) "requirements." Above from "Fuel Requirements for Engine Starting, by J. O. Eisinger, Dr. C. S. Cragoe, physicist, Bureau of Standards, before annual meeting of Automotive Engineers; printed in March, 1927, Journal of S. A. E.

"The 90 per cent point and the end-point have nothing whatever to do with ease of starting as is frequently assumed." Dr. G. G. Brown in the discussion which followed the above paper.

Doctor Cragoe pointed out in this paper that a hypothetical fuel to give satisfactory starting at 23 degrees Fahrenheit required 15 per cent more distilled off at 221 degrees Fahrenheit than one to give the same results in starting at 50 per cent Fahrenheit.

Bomb Test Method

T. A. Boyd's article in the March, 1927, Industrial and Engineering Chemistry on "Starting Properties of Motor Fuels" reviews a great deal of work on a bomb method of testing fuels. Mr. Boyd and his associates are not as enthusiastic as Doctor Cragoe on the Engler as a starting index, however, their work shows that the five fuels tested for starting properties ranked in the same order as their per cents off at 212 degrees Fahrenheit with the exception of a benzol blend at very low temperatures.

The following table shows his results at 5 degrees Centigrade or 41 degrees Fahrenheit:

Gasoline	% at 212	Air/Fuel Ratio Required for Starting
1	5%	0.2/1
3	12%	1.8/1
6	15%	3.0/1
2	42%	9.0/1

Although the above figures are not in direct ratio, they show clearly that the gasoline with the larger per cent at 212 degrees Fahrenheit starts with a leaner mixture.

Tendency to Knock

Marley, Stevens and Gruse of the Mellon Institute of Industrial Research delivered a paper on the effect of increasing volatility on antiknock properties. They found that by increasing the per cent at 212 degrees Fahrenheit from 23 per cent (the standard) to 42 per cent (all other factors being the same) the tendency to knock was reduced to one-half the standard rating; while reducing the amount to 212 degrees Fahrenheit to 10 per cent almost doubled the tendency to knock. They conclude that: "Evidence has been presented for the general belief that the detonating tendency of gasoline fractions increase with rise in boiling points."

Brown's Findings

Dr. G. G. Brown, after almost a year of intensive work for the Natural Gasoline Association, has reached the following conclusions regarding volatility:

"(1) To insure satisfactory starting and operation during the "warming up" period, and to prevent excessive carbon formation and crankcase dilution, it is necessary to add approximately 5 per cent of natural gasoline to a fuel, which is satisfactory in summer, for each 5 degrees drop in atmospheric temperature below 70 degrees Fahrenheit."

"(2) There is no decrease in maximum power with any blend of U. S. Motor gasoline and natural gasoline up to 50 per cent. This is true even under warm weather conditions with highly heated manifolds. When the intake manifold is not heated by the exhaust gases it is found that the maximum power increases slightly with the more volatile fuel."

"(3) The fuel consumption by volume with open throttle is the same within the experimental error for all motor fuels, including blends of U. S. Motor with natural gasoline containing up to 50 per cent natural gasoline used in engines with heated manifold."

"(4) Natural gasoline is 50 per cent as effective as benzol in suppressing knock when added to straight run Mid-Continent or Eastern gasoline."

All of the foregoing quotations are typical of data and conclusions that have been developed and reported during the past year or so by men of unquestioned standing and authority. It all points out clearly that more volatile motor fuel is highly desirable in the colder months.

Bureau of Mines' Report

The best medium to use as a gauge of the result of this work, and of the publicity given it, is the Bureau of Mines Semi-Annual Motor Gasoline Surveys. The most recent one shows that amount off at 221 degrees Fahrenheit was 32 per cent in January, 1927, while last July shows an average of 29 per cent. This shows 3 per cent increase and indicates that although some of the more progressive refiners are taking advantage of the results pointed out above, it shows more clearly that the refiners as a whole have failed to benefit from this work.

When the weight of the evidence in favor of volatility is considered together with the fact that there is ample natural gasoline available for everyone, it is indeed difficult to understand why the refiners do not manufacture and sell a more volatile product.

Our own motor fuel survey shows that a number of refiners are attempting to obtain this desirable property of volatil-

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Any pump unit can be removed for inspection or cleaning without disturbing any other unit and the only tool needed is a screw driver.

Is it any wonder no McCord lubricator has ever been known to wear out? That lubricators purchased ten and twelve years ago are still on the job.

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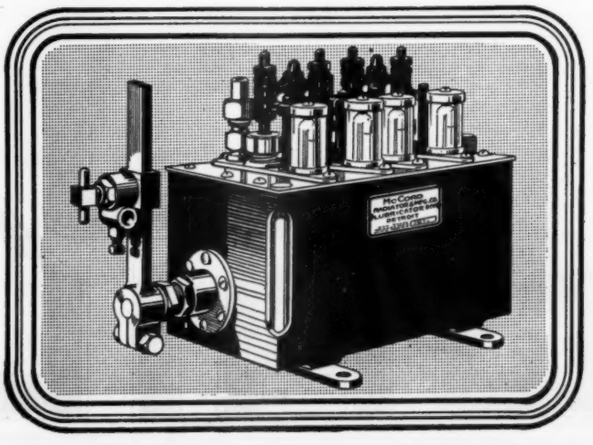

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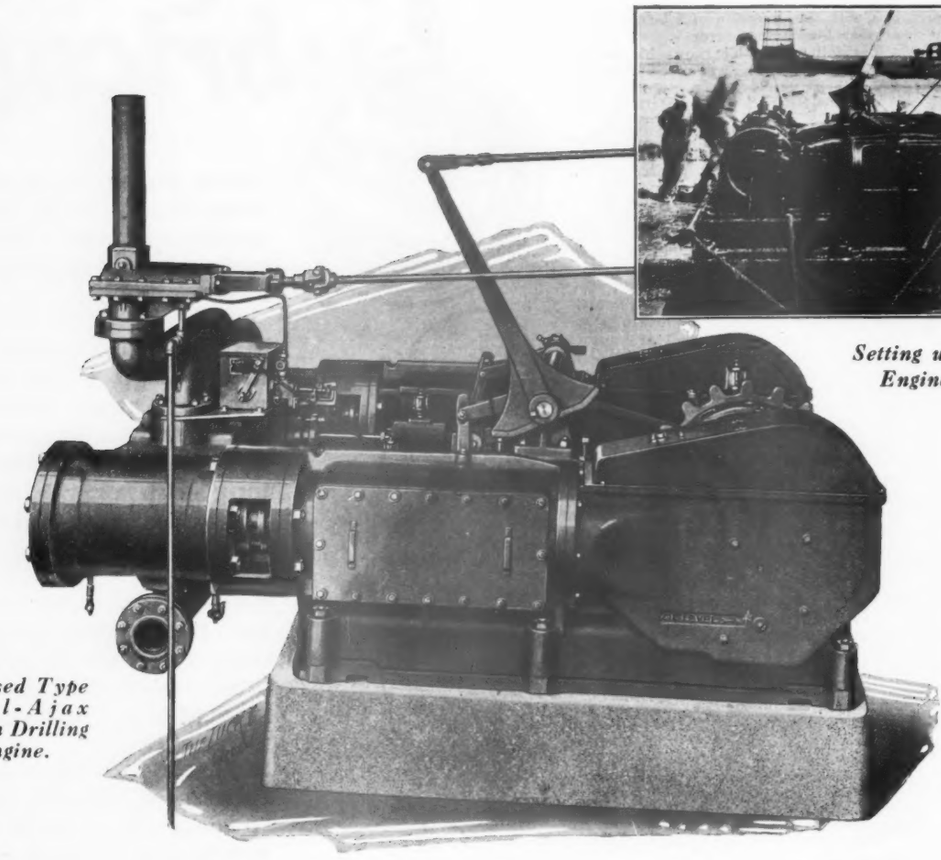
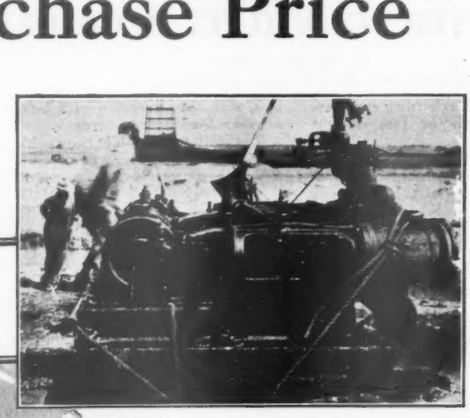


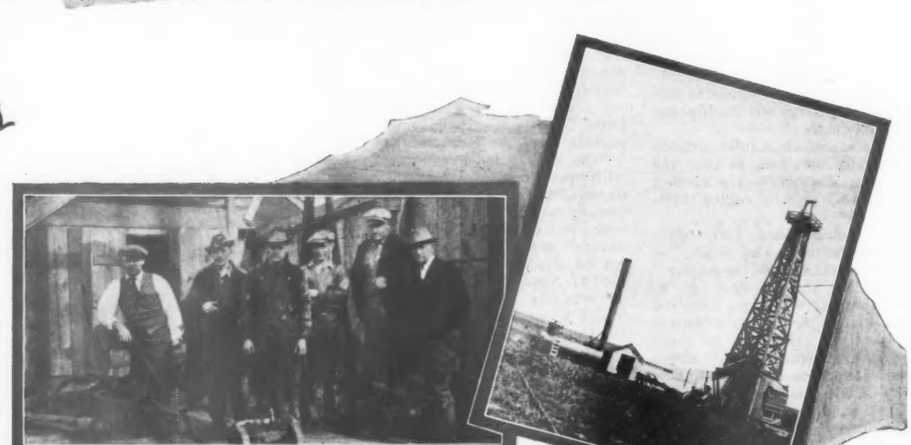
Enclosed Type Ideal-Ajax Twin Drilling Engine.



Setting up an Ideal-Ajax Engine (open type).

AJAX Snap Shots

Well drilled by the first *enclosed* type, single cylinder Ajax. The crew: Frank Henthorn, Contractor, Evert Henthorn, Frank Peppy, Jim Dempsy, Vern Moss, Frank Ulin.



AJAX-DRILLING

ity by lowering the 90 per cent and endpoint of their gasoline. This gasoline does have a lower average boiling point, but the whole decrease is in the latter half of the curve and not in the important front end. This low endpoint may tend to cause less carbon and less crankcase dilution, but what is more important, from the refiner's standpoint, it undoubtedly tends to cause less yield. When yields from crude are less, the profits are less. The desirable volatility, that is, the first 20 to 30 per cent of the curve can best, and certainly most economically, be obtained by using natural gasoline and the maximum yields obtained at the same time.

Some refiners have possibly failed to follow up this program because they still think of natural gasoline as a wild, unstable product; something that is hazardous to handle; and something that will cause enormous handling, blending and transit losses. It has been repeatedly demonstrated that with proper unloading and blending facilities, natural gasoline is not subject to material losses. Of course, since it is the most volatile component of motor fuel, its handling must be attended by the precautions its volatility require. But many refiners are not familiar with the progress that the industry has made in preparing natural gasoline for the market so that its volatility is reduced to the requirements of the blender rather than increased to the dividend requirements of the manufacturer. The writer's company shipments of this natural gasoline during January, 1927, average only 17 gallons per car outage.

In a business as competitive as manufacture and sales of motor fuel, in face of the weight of evidence in favor of more volatile gasoline, and considering the ample supply and low price of good natural gasoline, it is indeed difficult to explain why a greater number of refiners are not making more volatile gasoline.

MICHIGAN FIELDS

(Continued from Page 60)

producing before starting for the lower sand.

The Western Drilling & Oil Corp.'s No. 1 on the Mrs. Augusta Labuda property at Eddy and Oak Streets got the top of the Saginaw sand at 2,290 feet and drilled 18 feet in the sand, the well bailing 70 bb'ls. in 20 hours.

The Ohio Fuel Corp.'s No. 4 Fisher farm, in the NW of the SW of Section 11, Saginaw Township, and close to a mile west of the Sun Oil Co.'s Stelzreide farm, Saginaw producer, struck top of Saginaw sand at 2,324 feet and drilled 28 feet in the sand and was dry.

Bliss Petroleum Co.'s No. 2 Fred Engle farm, in the SE of the SW of Section 10, Saginaw Township, found the top of the Saginaw at 2,332 feet, passed through 27 feet of sand, then going 40 feet below sand to a total depth of 2,399 feet and was given up a dry hole as far as the Saginaw sand is concerned.

The Sun Oil Co.'s No. 2 on the C. J. Rabe farm, in the SW of Section 11, and just southwest from the good well on the Stelzreide farm, struck top of Saginaw sand at 2,301 feet and went 37 feet in, with a slight indication of oil and gas, but it is doubtful if it will prove a commercal producer.

Berea Sand Wells

In the Berea Pool, the Saginaw Prospecting Co.'s No. 4 on the Deindorfer Woods, City of Saginaw owned property, and upon which the discovery well of the pool was found, topped the Berea at 1,808 feet and drilled 19 feet in the sand, shooting with 80 quarts, resulting in what shows for a 15-bbl. initial producer. W. M. Bradley & Sons' No. 1 Clarence Clark property, at Clark and Hanchett Streets, got top of sand at 1,816 and went 20 feet in, showing for 12 bbls.

J. H. Shaltry and others' No. 2 J. H. Brechtelsbauer property, on North Michigan Avenue, found top of Berea at 1,810 feet and went 18 feet in the sand, getting what looks like a 15-bbl. initial producer.

Bliss Petroleum Co.'s No. 1 on the Ed. Engle farm, in the SW of Section 10, Saginaw Township, struck top of sand at 1,866 feet and got a fair showing at 16 feet in the sand, and possibly may make a 3-bbl. pumper. This is to the west of the Fred Engle lease owned by the same company and the farthest west of any of the producing wells of the field.

The Sun Oil Co.'s No. 6 on the John Schoentelt farm, Section 11, in the heart of the pool, is reported showing for 15 bbls.

Fordney Oil Co.'s No. 1 William Foley property, at Clark and Hermansau Streets, shows for a 15-bbl. initial producer.

President Declares Nation Should Support Oil Search Abroad

In an address before the United Press Association at New York, President Coolidge, referring to the Mexican situation, said:

"While there have been threats to seize oil property, no such seizures have lately been made, and suits are now pending in Mexican courts to restrain such seizures. Former decisions of their courts are relied on to support these suits. Stripped of all technicalities and involved legal discussion, this is the main difference which our Government has with the Mexican Government. We do not question their right to take any property, provided they pay fair compensation."

In regard to the situation in Nicaragua, the President said:

"In addition to the private property of our citizens, which is employed in lumber and agricultural operations, our Government has secured the right to construct a canal and establish a naval base, for which it paid $3,000,000. Contrary to the general impression, there are no oil properties in this country. Nevertheless, I have seen cartoons that pictured it as filled with oil derricks.

"Our country consumes vast quantities of oil and gasoline in its use of automobiles, gas engines and oil-burning furnaces. If these products are to be kept within a reasonable price, which is very important to a great body of our citizens, our people who go abroad to develop new fields and to increase the supply ought to have the encouragement and support of our Government."

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended April 23 totaled 949,000 bbls., a daily average of 135,571 bbls., compared with 1,211,000 bbls., a daily average of 173,000 bbls. for the week ended April 16, and a daily average of 173,286 bbls. for the four weeks ended April 23.

	Week Ended April 23
At Atlantic Coast Ports:	
Baltimore	141,000
New York	384,000
Others	208,000
Total	733,000
Daily average	104,714
At Gulf Coast Ports:	
Galveston district	51,000
New Orleans and Baton Rouge	165,000
Total	216,000
Daily average	30,857
At All United States Ports:	
Total	949,000
Daily average	135,571
Daily average four weeks ended	173,286

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended April 23 totaled 918,000 bbls., a daily average of 131,143 bbls., against 479,000 bbls., a daily average of 68,429 bbls. for the week ended April 16, and a daily average of 68,821 bbls. for the four weeks ended April 23.

At Atlantic Coast Ports:	
Baltimore	151,000
New York	660,000
Philadelphia	72,000
Others	35,000
Total	918,000
Daily average	131,143
Daily average four weeks ended	62,821
Distribution of Total California Oil Receipts is as follows:	
Crude	198,000
Gasoline	262,000
Fuel Oil	458,000
Total	918,000

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Rotary Saw Tooth Shoes for rotary system, punched from *forged steel*, not welded. The cutting edges are especially tempered and can be hardened to any specifications. Standard and intermediate sizes. →

←BARSCO "Baker" Pattern, punched from *forged steel*, not welded. The cutting edges are especially tempered and can be hardened to any specifications. Furnished in standard and intermediate sizes.

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CANADIAN FIELDS

(Continued from Page 53)

ning 10-inch casing to practically the bottom of the hole. Spooner Oils No. 1, LSD 12, Section 13-20-3w5, is reported to have resumed drilling at 2,985 feet after running casing. British Dominion Oil Corp., LSD 4, Section 5-20-2w5 has resumed drilling at 4,900 feet. Sentinel Oils, Section 8-20-2w5, is at 660 feet and drilling. Okalta Oils No. 1, LSD 1, Section 1-20-3w5 is at 2,700 feet and waiting for casing.

To Be Deepened

Okalta No. 2, LSD 8, Section 1-20-3w5, the old Indiana-Alberta shallow producer is getting ready to pull the 8-inch casing. When this is done, the well will be reamed out and deepened for 10-inch casing to 3,000 feet. The Indiana-Alberta well was drilled in 1914 by the Herron-Elder Oil & Gas Co., and got a flush production of 38 gravity crude at 2,774 feet depth, estimated 50 bbls. a day. The 10-inch was carried to 2,274 feet and the well finished with 8-inch. The new work is expected to bring back considerable of the production and will be carried on while waiting for the new casing for Okalta No. 1.

Seneca Oils, LSD 1, Section 34-20-3w5, is at 1,400 feet and drilling.

Dalhousie Oil Co. No. 1, LSD 4, Section 18-20-2w5, is shut down at 3,620 feet, waiting for a diamond drill bit. Dalhousie No. 5, LSD 16, Section 30-19-2w5, is at 3,875 feet and drilling. Dalhousie No. 6, LSD 10, Section 13-20-3w5, is drilling at 2,850 feet. Regent Oil Co., LSD 16, Section 1-20-3w5, is at 1,400 feet and working on casing. Stockmen Oils, LSD 12, Section 27-20-3w5, is at 3,950 feet and drilling. Irish-Canadian Oils has a location in LSD 11, Section 16-20-3w5. Midwest Oil Co., which has two abandoned deep tests in the field, has spotted No. 3 test in LSD 13, Section 12-20-3w5.

Alberta oil companies recently struck off the provincial register include the Sunalta Oil Co. of Canada, Ozada Petroleum Co., California-Canada Oil Co. and Athabasca Petroleum Products, Ltd., all old companies.

In the Morley Reserve area, Gold Coin Oils diamond drill test is reported down 1,745 feet and drilling. Stony Indian Oil Syndicate has located two tests, No. 1 on the Cobb & Warren lease and No. 2 on the Russell & Tregillus lease. In the Moose Mountain Field, Signal Hill Oil Co. No. 2, LSD 9, Section 34-23-5w5, is at 1,000 feet and drilling.

Southern Foothills

In the southern foothills, west of Nanton, the abandonment by Imperial Oil, Ltd. of its Rice Creek test in Section 4-14-2w5 marks the third failure in a field which was regarded as structurally very promising. The field lies some distance south of the Turner Valley Field, and the same geological occurrences are responsible for the structure. It was first tested by the Alberta Associated Oil Fields, Ltd. of Calgary in 1914, whose No. 2 well was drilled in SW, Section 7-16-2w5. This test, subsequently known as the Christie well, was shut down for some years, but ultimately Imperial Oil, Ltd. undertook to deepen it. The test is reputed to have got encouraging indications of oil, but had to be abandoned at 2,600 feet owing to casing trouble. Imperial Oil, Ltd. Willow Creek No. 1, NE, Section 29-14-2w5, was a test of another portion of the same general area, and finished dry at 3,600 feet, though some shows of oil were reported at various horizons. Imperial-Rice Creek No. 1, LSD 12, Section 4-14-2w5, was carried to 5,747 feet without getting through the sedimentary formations, and when abandoned was the deepest hole in Canada. Imperial-Highwood No. 1 LSD 3, Section 36-18-3w5, now drilling at 2,200 feet, is generally considered to be located on a northerly extension of the same structure, but is not expected to experience such deep drilling, as the three earlier tests were apparently on the fringe of structure, the formations showing some rise toward the north.

Monarch Field

In the Monarch Field, northwest of Calgary, Majestic Oils, Ltd. is making arrangements for its test in LSD 6, Section 36-31-7w5.

In the Steveville district, Neil McFadyen of Calgary is organizing a local company to put down a test for oil.

The Ontario-Alberta Development Co. financed by Ontario capital, has located a test in Township 17-8w4, on a structure 10 miles north of Suffield. The location is about 40 miles west of Medicine Hat, the structure having been mapped some time ago by Gordon Campbell. C. E. Duffield of Redcliffe will handle the drilling with a standard output, Pearson & Davies, petroleum engineers, of Calgary supervising the work. Production is looked for between 2,500 and 3,000 feet.

It is reported that the Union Oil Co. of California will drill a deep test on the acreage of the Northwestern Utilities, Ltd. in the Viking Field some 75 miles east of Edmonton.

In the Montana Fields, the Red Deer Oil Co. of Red Deed, Alta. is arranging to drill two more tests on its acreage. The company has already seven producing wells. Montana Major Oils, Ltd. has arranged to resume drilling on No. 1 well, shut down at 1,100 feet.

Wainwright Field

In the Wainwright Field, east of Edmonton, Wainwright Dome Oils, LSD 5, Section 18-44-6w4, is reported rigging up for a test. National Exploration Co., LSD 1, Section 30-45-6w4, is rigging up with its rotary outfit. It is reported that active operations will be resumed shortly by British Petroleums, Ltd. the pioneer producer in this field. This company has already drilled five wells, and has a location for a sixth. British Petroleum No. 1, LSD 6, Section 36-45-7w4, was carried to 2,038 feet and developed a gasser. No. 2, Section 30-45-6w4, got an oil sand at 1,970 feet; which started the really active work in the Irma-Wainwright area. No. 3, LSD 4, Section 29-45-6w4, was carried to 2,113 feet with shows of gas and oil, but apparently failed to develop a real producer. No. 3-B, drilled on the same section, at 2,260 feet got what seems to have been a lower oil sand; which was also encountered in No. 4, Section 30-45-6w4. No. 5 was later located in LSD 4, Section 31-45-6w4. Nos. 3-B and 4 were, in point of flush production, the best wells; the crude was an asphaltic product, ranging from 12 to 21 Baume, and showing some improvement in quality in the later and deeper wells. The wells seem to have settled into small pumpers, and for some years past there has been practically no activity on the part of British Petroleum, Ltd. which, in addition to pioneering oil production in this area, was the first company in Alberta to use rotary tools. The company holds extensive acreage, and the possibilities of large parts of this acreage, and of the lower horizons in this area, have still to be tested.

In Saskatchewan

In Saskatchewan, the Simpson Oil Co. No. 1 rotary test, Section 9-29-25w2, has resumed drilling at 300 feet. The Big Six Oil Co. of Saskatoon is securing Ralph Arnold to make a report on acreage near Kenaston. The Marren-Lloydminister Oil Co. is reported bringing in an outfit for a test on the Saskatchewan end of the Ribstone-Blackfoot structure, and it is reported that another company will drill near Unwin. There seems to be considerable interest in the prospects of gas development in western Saskatchewan, and it is understood that the Canadian Western Natural Gas Co. of Calgary and allied interests are investigating the possibility of developing a production that can be piped to Saskatoon, Regina and Moose Jaw.

Near Vera, the Unity Valley Oil Co.'s No. 1, SE, Section 23-41-24w3, is reported drilling around 2,300 feet. In the Riverhurst area, Riverhurst Oil & Gas Co., which got a fair gas production in No. 1 well, LSD 4, Section 33-22-7w3, at 518 feet, is resuming work on No. 2, same LSD, shut down at 510 feet.

In Manitoba, arrangements are being made for a capacity test of Irro Oil & Gas Co. well, LSD 11, Section 18-26-23w1, in the Grandview area, which last fall reported production at 693 feet.

In Ontario, Union Natural Gas Co. No. 14, Dawn Township, Lambton County, is reported at 1,150 feet and drilling. In the Tilbury Field, Kent County, Union Natural Gas Co.'s No. 266, Hugh Shanks farm, Lot 188, Lake Road, Romney Township, is drilling between 500 and 600 feet. Union No. 265, J. Coatsworth farm, Lot 186, north of No. 264 gasser, has spudded in.

Southern Alberta

In southern Alberta, the W. G. Rowe syndicate of Toronto which recently blanketed 80,000 acres of the Cypress Hills structure west of Medicine Hat is planning to put three strings of tools at work this season. Mr. Rowe is now making topographical surveys and selecting drilling sites. In the earlier survey, he was assisted by Col. R. B. Harkness of Toronto, natural gas commissioner for Ontario, who is a member of the syndicate. It is stated that the Cypress Hills area is somewhat similar to the Kevin-Sunburst Field of Montana; it has a pronounced structure with perfect closures on both sides; and it is estimated that the Madison limestone, the producing formation in the Turner Valley Field, will be encountered between 3,300 and 3,600 feet.

On the Quarantine Reserve near Coutts, Urban Oils, Section 4-1-15w4, is cleaning out its deep hole to 3,423 feet, preparatory to a pumping test of the sand, which indicated slight traces of oil.

In southwestern Alberta, Ainsworth Oil Co. of Calgary has a water well rig on its Milk River Dome holding in charge of John Maughan, to test the sub-surface structure. The glacial drift in this area is about 200 feet thick, and the acreage will be carefully tested for structure before the commercial test for oil is started with the standard outfit.

Mount Royal Oil Co. No. 1, LSD 4, Section 7-6-1w5, has derrick up, and will spud in early in May. A standard outfit will be used. Work has been held up by bad roads. Mount Royal No. 2 is located in SE, Section 15-6-1w5.

GULF COAST FIELDS

(Continued from Page 49)

Anderson & Plummer's No. 1 Whitehead is drilling around 435 feet. J. F. Bashara's No. 2 Bender is at 4,090 feet. The Navarro Oil Co.'s No. 1 Humble is being deepened. M. Kouri's No. 2 Jones is rebuilding derrick, the hole being 2,600 feet deep. Lee & Woodard's No. 2 Settegast is rigging. No. 1 Settegast is pumping 15 bbls. at 3,400 feet.

Locations have been made for J. F. Bashara's No. 1 fee; Eunice & Carpenter's No. 1 Bullock-Nash; Navarro Oil Co.'s No. 2 Humble.

On the east side, where the first production was developed, The Texas Exploration Co.'s No. 10 Dooley is drilling around 4,100 feet. H. R. Cullen is deepening No. 8 Howe at 4,120 feet, and the Navarro Oil Co.'s No. 1 Cain will be deepened.

Fort Bend County

In the Big Creek Pool, the Gulf Production Co.'s No. 1 J. H. P. Davis is drilling around 3,875 feet, and No. 1-A J. H. P. Davis is at 3,387 feet. No. 2 Hausler is drilling at 4,108 feet. No. 40 Davis is around 2,965 feet, and No. 41 Davis is nearing 3,000 feet. The Texas Company's No. 1 Wheat is drilling at 1,534 feet, and No. 4 fee is at 3,765 feet.

In the Blue Ridge Pool, the Gulf Production Co.'s No. 9-B blakely is at 3,435 feet, and No. 15-C is below 3,443 feet. No. 4 Luscher is at 3,420 feet, and No. 10 West Schenck is at 2,750 feet. No. 5 Invincible is drilling around 3,435 feet. The Humphreys Corp.'s No. 3 West-Schenck is about 3,290 feet. The Abercrombie Oil Co.'s No. 9 West-Schenck is drilling around 2,980 feet, and No. 1-A Robinson is below 3,300 feet. The Overly Production Co.'s No. 1 Blakely is around 4,000 feet.

Boling and Other Pools

The Texas Company abandoned No. 2 Farmer on the northeast flank of the Boling Dome at 4,480 feet in shale. The Sun Oil Co.'s No. 2 Farmer on that side is drilling in gyp and lime around 2,670 feet.

The Boling Co. is drilling No. 3 McCaresen in the shallow sand section on the dome. The Gulf Production Co.'s No. 4 Chase is around 1,000 feet. The Vacuum Oil Co.'s No. 4 Hooper is around 4,810 feet. The Texas Company's No. 3 Felder is at 4,776 feet. Three wells are drilling in the shallow sand section.

The Sun Oil Co.'s No. 11 Cade at High Island is drilling around 2,665 feet, and No. 12 Lockhart is at 2,254 feet. The Ryeade Petroleum Corp.'s No. 14 Wisdom at Nash is rigging.

South Louisiana Pools

The Gulf Refining Co.'s No. 5 Lutcher Moore in the Stark Pool is drilling around 4,000 feet. No. 4 Lutcher Moore, the discovery well, which came in last January flowing 2,500 bbls. initial at 4,000 feet, is now flowing 1,460 bbls. of oil with 20 per cent water. Gulf company's No. 2 Industrial Lumber Co. is around 3,000 feet.

In the Edgerly Pool, the Gulf Refining Co.'s No. 41 Bright-Penn is at 3,765 feet. The Crotty Oil Co.'s No. 12 Lilliard is at 1,500 feet, and the Rex Petroleum Co.'s No. 2 Hunter will be deepened.

In the Lochport Pool, the Vacuum-Gulf's company's joint No. 15 Miller is drilling at 3,810 feet, No. 16 at 3,875 feet, with a location for No. 17. No. 3 Bordages is fishing. No. 3 Bayou D' Inde is drilling at 1,345 feet. No. 1 Farquhar is fishing at 4,400 feet, and No. 5 is drilling around 4,065 feet. No. 2 Friedberg & Wolf is drilling deeper at 4,396 feet. Locations have been made for Nos. 2 Farquhar and 4 Friedberg & Wolf.

Coastal Texas

The Liberty Bell Oil Co. abandoned No. 1 Humphrey, north of Liberty, Liberty County, at 800 feet. The Dayton Oil Co.'s No. 2 Jones in the old Dayton section is drilling.

Austin County—Racoon Bend District: Humble- Valley Oil Co.'s joint No. 1 Bellville school lands is at 2,354 feet. No. 2 Reese is at 1,674 feet. The other tests are idle temporarily. Green and others' No. 1 Mewis, north of Bellville is at 843 feet.

Brazoria County—The Freeport Sulphur Co. has abandoned formation test drilling on the west side of the San Bernard River. Allen Dome: Roxana Petroleum Corp.'s No. 3 Allen is pulling the casing at 5,834 feet. No. 1 on the bank of the San Bernard River is around 5,150 feet. No. 1 Poole is drilling at 765 feet. Clemens Dome: Roxana Petroleum Corp.'s No. 3-A Pabst is drilling around 4,906 feet. No. 4 Clemens is at 4,435 feet. Stratton Ridge Dome: Gulf Production Co.'s No. 2 Perry is at 2,318 feet. The Pure Oil-Humphreys Corp.'s joint No. 1 Armstrong is at 3,342 feet. The Associated Oil Co.'s No. 1 Seaburn is drilling about 3,298 feet. Near Anchor, Staley and others' No. 1 Glover is at 980 feet.

Fort Bend County—Long Point Dome: Gulf Production Co.'s No. 4 Beard is around 2,980 feet. No. 2 Wolfe is at 965 feet, and No. 2 Trone on the west side of the dome is at 1,106 feet.

Harris County—Hockley Dome: Humble Oil & Refining Co.'s No. 1 Warren is drilling around 1,400 feet. The Atlantic Oil Producing Co.'s No. 1 Burt & Griffith, north of Humble, is around 3,675 feet. Dr. P. S. Griffith's No. 3 fee, 12 miles north of Houston, is drilling around 2,000 feet. No. 2 was abandoned as a bad fishing job at 3,115 feet.

Jefferson County — Fannette Dome: Gulf Production Co.'s No. 3 Bordages is drilling below 4,858 feet. Big Hill Dome: Houston Oil Co.'s No. 1 Fitzhugh is at 1,308 feet. Edmunds and others, northwest of Port Arthur, is at 2,835 feet.

Montgomery County—Brain and others' No. 1 Fitch, northeast of Spring, is around 2,565 feet.

Matagorda County — Hawkinsville

(Continued on Page 139)

The Truth About Mill Seconds

Seven years of faithful performance of the Taubman Supply Corporation has accomplished, not only the success of this worthy Organization, it has also helped reform an important industry serving the Oil and Gas Fraternity.

Since we have added the distribution of new pipe, in line with the TAUBMAN policy, we feel it our duty to overcome any irregular methods we find as we always have in the used pipe.

There is an alarming tonnage of MILL SECONDS being marketed in the Mid-Continent Field by brokers and dealers who, sometimes, represent same to be either a little underweight or untested new pipe. Mills who dispose of their SECONDS through brokers and dealers do not stencil same to indicate the true condition as to its grade. While there is only approximately ten per cent so-called underweights which would be safe to use for some light purpose, approximately ninety per cent of MILL SECONDS really consists of DEFECTIVE WELDS, BLISTERED BURNED METAL and other inferior grades, yet the customer is seldom told of its true condition.

Dealers who handle MILL SECONDS purchase same from Mills mostly plain end, as it runs when the Mill determines same as defective, shipping most of this into their yards, sorting and putting collars and threads on same, selling for casing or screw line pipe, the remainder sold for plain end lines.

On January 28th we wrote to every Pipe Manufacturer asking their co-operation by stenciling MILL SECONDS indicating its true condition, which would close the avenue for misrepresentation. Two of the Mills replied they are not selling MILL SECONDS and, upon due investigation, we find their statement true. From two other Mills we received a letter advising they had discontinued the practice of selling MILL SECONDS some time ago. The remainder of the Mills stated, while they were marketing MILL SECONDS without stenciling, they did not know of any method of stenciling such pipe so the stencil could not be removed.

For the purpose of acquainting the Oil and Gas Industry with the true condition of MILL SECONDS, we purchased one carload from a dealer and placed same in our Tulsa yard so we may have it with the rest of our evidence to substantiate our contention.

For further evidence that MILL SECONDS cannot be successfully marketed without misrepresentation, why do the Mills who sell SECONDS dispose of same through brokers and dealers rather than through their regular Distributors and Supply Houses?

Remember—when you buy MILL SECONDS, you encourage carelessness of manufacture and inspection of pipe.

If your job does not require heavy pipe, you can purchase No. 1 grade, light weight pipe from regular Mill Distributors at practically the same cost you pay for MILL SECONDS which will not only insure you satisfactory service and a great saving in construction and maintenance, but also a 100 per cent salvage.

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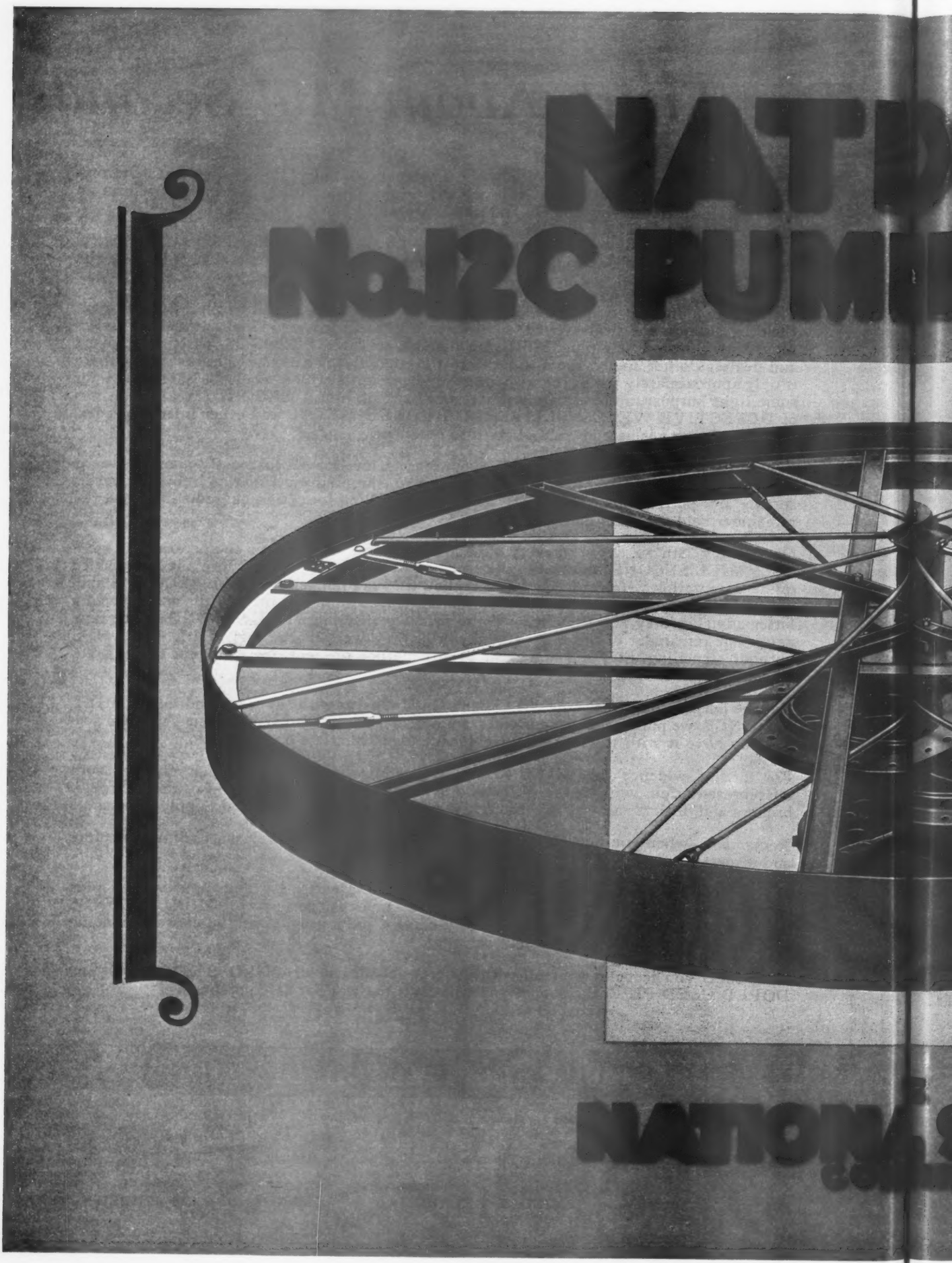
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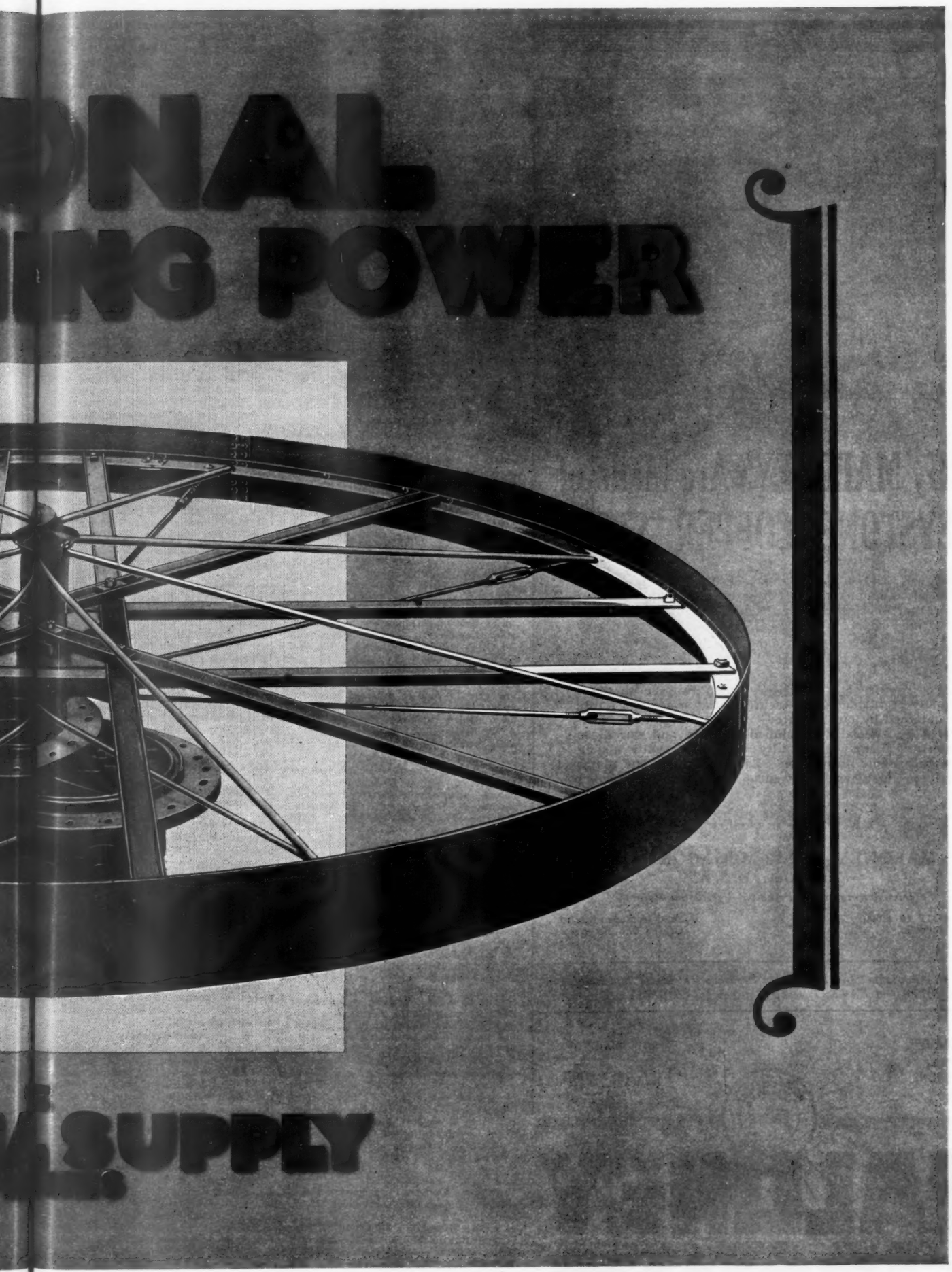
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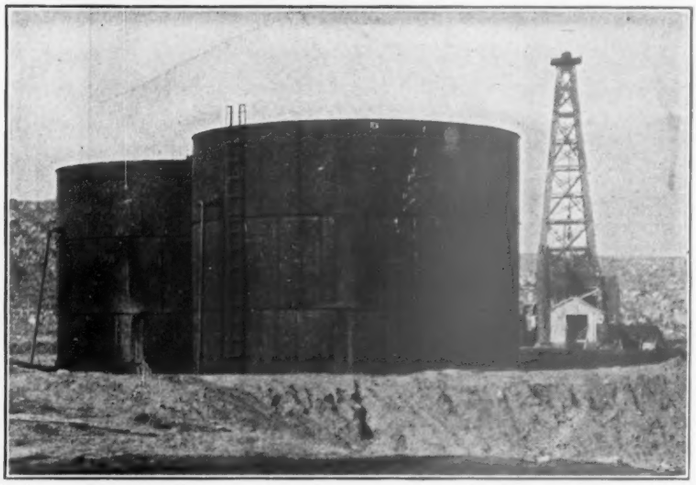

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LA.-ARK. WILDCATS

(Continued from Page 46)

3,079 feet. Simms Oil Co. is drilling No. 2 Sandidge, Section 5-18-11, at 2,235 feet. Sligo Syndicate's No. 1 Jeter, Section 23-17-12, is at 1,050 feet. Tubbs and associates are drilling at 2,250 feet in No. 1 Jacobs, Section 26-20-13.

Claiborne Parish

Magnolia Petroleum Co. is drilling at 3,220 feet in No. 1 Lee, Section 16-22-8. Mitchell & Jansen's No. 1 Wilburn, Section 23-19-7, is in a sandy shale formation at 2,300 feet. Triangle Drilling Co.'s No. 1 Byrd, Section 17-18-5, is drilling at 1,150 feet.

DeSoto Parish

Helm & Jarman's No. 1 Joyner, Section 28-11-12, has been shut down at 3,018 feet. Hoosier Oil Co. has started a derrick for a test at No. 1 Lanier, Section 5-11-11. Magnolia Petroleum Co. is drilling at 1,300 feet in No. 1 Logan, Section 17-10-12. Reliance Drilling Co. has a rig up for No. 1 Jones, Section 8-11-14. William Sebastian Syndicate is drilling No. 1 Sebastian, Section 11-10-13, in a lime formation at 2,775 feet.

Franklin Parish

Barbour Oil Co. has resumed operations in No. 1 Baker, Section 3-15-7e, and is drilling in shale and boulders, at 2,260 feet.

Grant Parish

Philp and associates' No. 1 Barrett, Section 17-9-1e, is shut down waiting orders at a depth of 1,570 feet. Rue and associates have been forced to shut down because of high water No. 1 Bliss and Williams, Section 10-7-4w. This test has reached 1,913 feet.

LaSalle Parish

Tunica Petroleum Co. has completed a derrick for No. 27 L. & A., Section 9-7-2e. Drilling has begun in No. 26 and the 6-inch casing has been set at 756 feet. No. 25 is drilling at 2,210 feet.

Natchitoches Parish

Lawson & Pharris are coring in a salt water sand at 2,615 feet in No. 1 Clark Morse Lumber Co., Section 23-5-6w. Ohio Oil Co. is going deeper in No. 1 Thomas, Section 23-13-6w. A Halliburton test was made at 1,906 feet but nothing showed. George Sabatier and associates are trying to mud off a gravel bed found at 300 feet in No. 1 Ritchie, Section 38-5-4. Tunica Petroleum Co.'s No. 24 L. & A. Section 35-13-6w, is drilling in a shale formation at 2,880 feet.

Rapides Parish

Hincey & Macke have abandoned No. 1 Barrow, Section 29-5-2e, and have moved away the rig. The hole had reached a depth of 2,800 feet. Wheeler & Wilbanks have abandoned No. 1 Lanier, Section 3-4-3e, a depth of 1,300 feet having been reached. Minnesota Oil Corp.'s No. 1 Wettermack, Section 7-5-3w, cored the top of a sand showing some oil and gas at 2,065 feet.

Red River Parish

Gulf Refining Co. is setting up a standard rig to drill in with cable tools No. 23 Kennedy, Section 24-13-11. It is on a sand at 2,391 feet. Phillips Petroleum Co. because of high water has shut down No. 1 Long Bell, Section 16-12-8. It is at 2,836 feet.

Richland Parish

Gulf Refining Co. is drilling gumbo at 2,525 feet in No. 2 Rhymes, Section 5-16-6e. The same company's No. 2 Seibert, Section 11-16-5e, is in blue shale at 1,863 feet. No. 1 Wayne, Section 36-17-5e, is reaming down at 2,870 feet. Helm and associates have a rig up for No. 1 Tensas, Section 10-14-5e. Ruston Drilling Co. is at 1,828 feet in No. 1 Earle, Section 5-16-6e. Stovall Drilling Co. is testing red shale in an open hole at 2,433 feet. Texas-Louisiana Carbon Co. has set the liner and is trying to kill a salt water flow at 2,602 feet in No. 1 Broughton, Section 1-15-6e.

Sabine Parish

Arkansas Fuel Oil Corp. has completed the rig for No. 2 Logan, Section 28-10-12, following the completions of No. 3 and 4, Section 33, and No. 5, Section 28. The latter is flowing 50 bbls. through 2½-inch tubing and packer from sand at 3,260-94 feet. Beckman and Freeman's No. 1 Logan, Section 28, is waiting orders at 3,272 feet after making only 1,000,000 feet of gas with a spray of oil on being deepened from 3,206-23 feet. L. M. Emlet is pulling the liner in No. 5 Bowman, Section 9-7-12, to drill deeper. It is at 4,070 feet but has been shut down since January. No. 7 Bowman, Section 14-7-14, has been shut down at 2,623 feet because of high water. Louisiana Oil & Refining Co. has a rig up for No. 1 Logan, Section 28-10-12. Lewis Clark Petroleum Co.'s No. 1 Wyatt, Section 23-5-12, is in a lime formation at 3,798 feet. Magnolia Petroleum Co. has drilled out the 10-inch plug cemented at 240 feet and is at 440 feet. The same company's No. 1 Louisiana L. L. L. Co., Section 11-6-11, is being reamed to the bottom at 3,262 feet. Moffett and associates have cemented 6⅝-inch casing at 3,136 feet in No. 1 Moore, Section 5-9-12. C. W. Robinson and associates have staked a location for No. 1 Hamlin, Section 6-9-13. Woodley Petroleum Co.'s No. 1 Robinson, Section 33-10-12, is drilling at 1,100 feet.

Winn Parish

Humble Oil & Refining Co. is coring rock at 723 feet in No. 21 L. & A., Section 28-10-2w. H. L. Hunt's No. 1 Tremont, Section 27-10-1w, has been shut down at 1,200 feet because of high water. J. C. Long is making arrangements to deepen No. 1 Milam, Section 28-13-3w. It has been shut down since February when it cored a dry sand at 1,420-26 feet. Ohio Oil Co. has started opeations in No. 1 McCarty, Section 5-12-1w, and has set 10-inch casing at 200 feet. M. M. Roark is fishing for a bit lost in the hole at 300 feet in No. 1 Southern Minerals Co., Section 19-11-3w. Standard Oil Co. is coring No. 1 Tremont, Section 1-12-2w, depth being 3,840 feet.

ARKANSAS

Union County

J. W. Olvey has completed No. 1 Simmons, Section 15-18-13, Lawson-Urbana district, making an estimated 65,000,000 feet of gas from sand at 2,673-82 feet. Garrett Modisette Drilling Co.'s No. 1 Union Saw Mill Co., Section 7-18-13, has been shut down for derrick repairs. It cored an oil sand at 3,820 feet. Lion Oil & Refining Co. has a rig up for No. 1 Murphy, Section 23-18-18. Lyell and associates are setting 12½-inch casing at 47 feet in No. 1 Stegall, Section 11-17-3, having just started operations. Marine Oil Co. is to drill deeper in A-2 Thompson, Section 10-18-13. It tested salt water at 2,664 feet. Ohio Oil Co. has a drill stem struck in No. 1 Crain, Section 1-17-14. This test is at a depth of 3,014 feet where the bottom of the hole has been recemented to shut off salt water. Rice and associates have a derrick completed for No. 1 Newton, Section 13-17-16. Rovenger Oil Corp. has a salt water blow out in No. 1 McCain, Section 4-17-14, which has been shut in at 2,748 feet. Simms Oil Co. has cemented 6⅝-inch casing at 2,638 feet in No. 1 Crawford, Section 14-18-13. Sun Oil Co. is drilling at 1,125 feet in No. 1 Thompson, Section 19-18-13. The 12½-inch casing is set at 135 feet. Vaughan and associates have started operations in No. 1 Ezzell, Section 12-17-15, drilling at 650 feet.

Ouachita County

Humble Oil & Refining Co.'s No. 1 Lancaster, Section 15-14-19, is in a gumbo at 825 feet. Other wildcat operations are at a standstill.

Bradley County

Johnson & Adams' No. 1 Southern Timber Co., Section 12-12-12, has been shut down for fuel. This test has reached 2,035 feet. Whelen Oil Co.'s No. 1 Burrow, Section 35-10-20, tested salt water in sand at 1,331-38 feet. The 8¼-inch casing has been cemented at 1,329 feet.

Columbia County

Mitchell & Isles' No. 2 Bodcau, Section 4-20-21, is drilling at 1,650 feet.

Grant County

Shaffer Oil & Refining Co.'s No. 1 Long Bell, Section 36-5-12, is drilling in sand and shale at 2,110 feet.

Hempstead County

Arkansas Natural Gas Co. has started operations in its new test, No. 1 Goodlet, Section 34-10-26. It is drilling at 125 feet.

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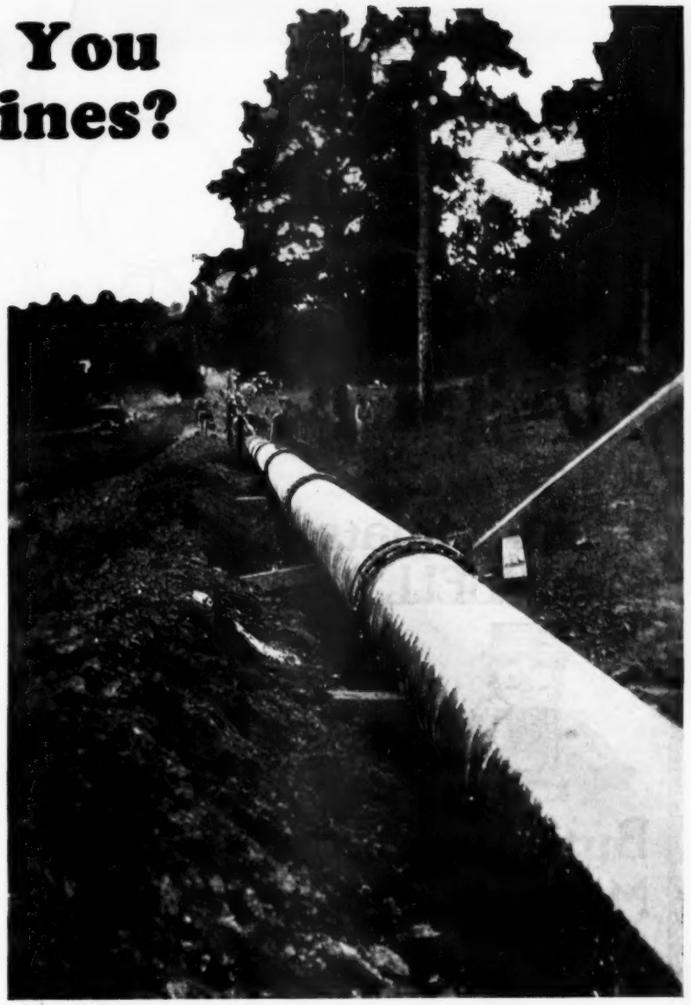

An oil or gas line underground is out of sight. But how long can you keep it out of *mind*? How long before trouble starts from corrosion? How long before the line is lifted and recoated?

These questions have been answered far too soon and far too often on most oil and natural gas lines. On pipe coated with BITUMASTIC ENAMEL, however, we have yet to find the answer. No steel pipe lines in this country have as yet been buried for sufficient periods of time to prove how long this coating *can* and *will* protect them.

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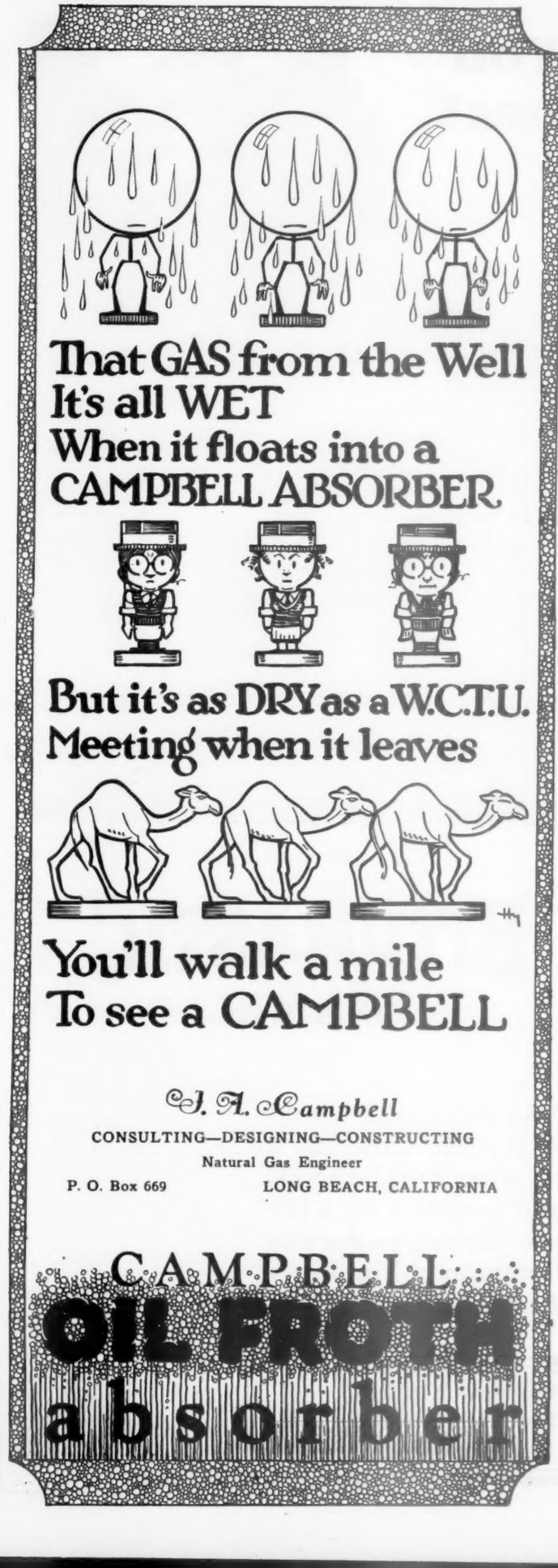

CENTRAL WEST FIELDS

(Continued from Page 62)

were 9 new wells started drilling and 11 new locations for wells staked out. Weather conditions have improved wonderfully over the producing territory and while little will be accomplished until after the annual gathering of the Natural Gas Association of America at Cincinnati the forepart of May, after that there should be a revival in new work.

In Orange Township, Ashland County, Hulse & Kundtz drilled in No. 2 in the northwest corner of the E. E. Markel 28 acres, Section 4, which is a nice gas producer. In Hanover Township, the Ohio Fuel Gas Co.'s second well on the Tom Miller farm, Section 16, is an average gas well, and this company made a location for a test 300 feet from the south line and 600 feet from the east line of the D. E. Sidle 80 acres, Section 25. Same company made a location for a wildcat on the Electa J. Wallace 160 acres, Section 27, Green Township. In Clear Creek Township, the Logan Gas Co. is getting ready to start a test in the northwest corner of the Charles Brown 80 acres, Section 27. Bert Cameron's test, 730 feet from the north line and 745 from the east line of the Catherine Findlay 187 acres, Section 35, Jackson Township, came in a dry hole.

Empire Gas & Fuel Co. is drilling No. 3 on the Charles R Puchhus 90 acres, Section 36, Lafayette Township, Medina County. Same company is drilling a test in the northeast corner of the Charles C. Weibur 104 acres, Section 36, Medina Township.

In Wayne County, Chester Township, near Wooster, the Ohio Fuel Gas Co. is drilling No. 3 in the northeast corner of the Catherine Funk 152 acres, Section 1. In Milton Township, the East Ohio Gas Co. is drilling a test in the southeast corner of the John Bauman 170 acres, Section 21, while in Congress Township, Brenner and Brenner are starting a test in the northwest corner of the S. A. Swanson 100 acres, Section 16.

In Holmes County, Paint Township, the Logan Gas Co.'s test, 900 feet from the south line and 1,161 feet from the east line of the James P. Miller 23 acres, Section 16, is a fair gas well. In Monroe Township, the Kemrow company is drilling a test in the northeast corner of the Mary A. Beeler 42 acres, Lot 21. In Hardy Township, the East Ohio Gas Co. made a location for a second test in the northeast corner of the Harriett McCullough 100 acres, Lot 20, and also for No. 5 in the southeast corner of the W. H Uhl 100 acres, Lot 21. In Richland Township, the Reno Oil Co.'s No. 3 in the southwest corner of the Druzella Kyser 42 acres, Lot 25, showed an initial production of 12 bbls. East Ohio Gas Co. made a location for No. 7 well, 800 feet from the south line and 300 feet from the east line of the A. J. Baker 79 acres, Lot 18, Prairie Township. The Kemrow company is drilling No. 3 well, 800 feet from the south line and 370 feet from the west line of the Albert C. Fites 87 acres, Lot 13, Kilbuck Township.

E. A. Sweeney and others' second test in the southwest corner of the Hannah McCall Davis 26 acres, Lot 36, Carthage Township, Athens County, is an average gas well.

In the Cleveland Field, in Dover Township, Cuyahoga County, Hulse and Kundtz's No. 1 in the southeast corner of the E. Linpert 50 acres, Lot 14, was a dry hole Logan Gas Co.'s No. 1 well, 200 feet from the north line and 600 feet from the west line of the H. L. Rutherford 25 acres, Lot 37, was a duster. In Strongville Township, Dillon & McFrederick's test, 1,300 feet from the south line and 400 feet from the east line of the George Zeig 50 acres, Lot 32, is drilling. In Olmstead Township, Hulse & Kundtz are drilling a test in the northwest corner of the G. H. Barnum 18 acres, Lot 18.

In Franklin Township, in Summitt County, F. A. Brendal and others are drilling a test in the northwest corner of the Jacob and Emma Boettler 152 acres.

Indiana

The finding of a 150-bbl. producer by the Euclid Oil Co. in No. 4 in the southwest corner of the Veirling heirs' farm, in the southwest quarter of Section 28, Washington Township, Gibson County, is a feature of the southwestern portion of Indiana for the week and should bring about some additional development work in that area, as wells of that caliber are inviting to operators and seldom found nowadays.

In Logan Township, Pike County, Andrews & Burden's test in the southeast corner of the Anna A. Falls farm, in the southeast quarter of Section 14, pumped 3 bbls. Top of sand was found at 1,405 feet and drilled 39 feet in the sand. Skidmore and others' test in the northwest corner of the William West farm, Section 24, proved a duster at 1,375 feet.

In Daviess County, Harrison Township, Dill, Cochran and others' test, 600 feet from the north line and 200 feet from the west line of the Hamlet Robinson farm, in the southwest quarter of Section 32, had a slight oil showing at 950 feet, but drilled into a heavy dose of salt water at 1,200 feet and the hole has been given up as worthless. In Veale Township, Phipps and Blosser's test in the northwest corner of the Stanton Barber farm, in the northeast corner of Section 33, was a dry hole at 1,540 feet.

In Vigo County, Prairie Creek Township, the Ohio Oil Co.'s test on the James A. Stout farm, Section 26, was a dry hole. J. B. Miller and others are drilling a test on the Mary J. McDonald farm, Section 36, Linton Township, same county.

In Turman Township, Sullivan County, the W. C. Kennedy Co. has a rig in for No. 19 on the Lafayette Dix farm, Section 1, and the Sioso Oil Corp. is drilling a second well on the J. R. Thomas farm, Section 6, where the high-gravity oil was discovered a few months ago.

In the old Trenton Rock area of eastern Indiana, in the Berne Field, in Jefferson Township, Adams County, the G. B. W. Oil & Gas Co.'s No. 3 on the Fred Kaufman farm, Section 5, is an initial 15-bbl. producer. In Blue Creek Township, same county, the Schulte Oil & Gas Co. is drilling No. 4 on the George Shrank farm, Section 20.

In Monroe Township, Randolph County, Craig & Dodson's test on the Elmer Deal farm, Section 8, is a 2-bbl. pumper.

In Penn Township, Jay County, Ridenour and others' No. 1 on the W. and L. Horn farm, Section 33, was a dry hole. Heeter and Masters have a rig in for a test on the A. C. Brown farm, Section 33. In Knox Township, Sanders and Masters are drilling a test on the D. R. Hapner farm.

Unknown parties are reported to have a gas showing at a well on the Roamake farm, Section 21, Maumee Township, Allen County.

Illinois

The bringing in of a 100-bbl producer in the deep McCloskey sand by the Ohio Oil Co. in No. 18 well, 325 feet from the north line and 1,275 feet from the east line of the W. E. Robbins No. 2 farm, in the southeast quarter of Section 27, Dennison Township, Lawrence County, is the real feature of the Illinois Field during the week. This well found its pay at a total depth of 1,815 feet and shows that the wonder sand of the Bridgeport Field has not entirely been drained. This is and has been the most productive formation in the field and shows most remarkable staying qualities. Another well will be started at once on the same farm.

Another interesting and shallow development far away from the real Illinois Field is that in Morgan County, near Jacksonville, the county seat, and west of Springfield, the state capital, near the western part of the state. In this area four new wells are reported of recent completion, but none of them proved oil producers, although Erwin and others' No. 4 on the O. F. Conklin farm, Section 18, Jacksonville Township, had a slight showing of oil at 296 feet, but not in

quantities to make it a commercial producer. This well was drilled to a total depth of 304 feet. Same firm got a small gas well at No. 1 on the Arnold farm, same section, at 304 feet. In the same section, Timberlake and Higgins brought in a 2,000,000-foot gas well at No. 1 on the Willerton farm, at a depth of 435 feet. In Section 8, same township, Benoist Brothers got a dry hole in a test on the C. T. Travis farm. Erwin and others are drilling No. 5 on the O. F. Conklin farm, Section 18.

In Madison County, Section 10-6n-5, northeast of St. Louis, Capella, Southerland and others drilled a dry hole on the Hugh Latowsky farm and, as reported by the Illinois Geological Department, drilled to a depth of 841 feet. A wildcat is drilling by E. S. Mason and others in Section 24-1n-8w, in St. Clair County, out from East St. Louis. A test is being drilled by J. L. Palmer, in Section 2-26n-3w. in Tazewell County, in the north central portion of the state, out from Peoria. R. R Irwin is drilling a test well near Toluca on the A. T. & S. F. Railroad, in Marshall County, near the southeast portion of the county and southwest of Streator.

In Martin Township, Crawford County, in the old development, H. D. Barker and others' No. 1 on the J. S. Baker farm, is a dry hole. E. A. Ruedy and others are drilling a test on the John Fain farm, Section 22, Casey Township, Clark County.

Wabash County

In Wabash Township, Wabash County, Oldendorf and others' second well, 700 feet from the north line and 200 feet from the east line of the Jesse Cisil farm, in the southeast quarter of Section 2, in the Allendale Pool, struck top of sand at 1,545 feet and at 14 feet in the sand got a 20-bbl. initial producer. Art Smith and others' No. 1 on the C. Litherland farm, Section 16, is reported good for 5 bbls. at 1,562 feet. Dewees and others' test in the northeast corner of the A. Schafer farm, in the southwest quarter of Section 11, proved a duster at a total depth of 1,602 feet.

In Friendsville Township, the Wood Farm Oil Co.'s No. 4 on the J. O. Wood farm came in a dry hole at 1,650 feet. Joe S. Young, Jr., and others are starting another well on the J. W. Price farm, Section 19, same township.

ARTESIA, NEW MEXICO

(Continued from Page 56)

wanna Oil & Refining Co.'s No. 1, NE SE, Section 17-16-27, shut down at 2,000 feet making new contract; Lackawana Oil & Refining Co.'s No. 7, C NW SE Section 21-18-28, shut down at 2,142 feet, top of pay; Marland Oil Co.'s No. 1 Hale, CWL Section 11-20-30, drilling at 1,700 feet; Manhattan Oil Co.'s No. 1 Cronin, SE NE Section 1-18-27, drilling at 2,750 feet; Midwest Refining's No. 1 Terry, SW cor. NW Section 15-18-26, shut down; Ohio Oil Co.'s No. 1 Marland, SW SW, Section 13-22-29, drilling at 3,095 feet; Prairie Oil & Gas Co.'s No. 1 Keel, SE SE Section 10-17-31, pumping 15 bbls.; Picher Oil & Gas Corp.'s No. 4, NW cor. SE SE Section 12-18-27, location; W. A. Stone Oil Co.'s No. 1 Hnulik, SW cor. NW NW, Section 25-17-26, drilling below 1,200 feet; Superior Oil Co.'s No. 1, SW NW Section 33-23-28, rigging up; Skelly Oil Co.'s No. 1 Lynch, Section 22-17-31, drilling in; Texas Production Co.'s No. 1 Robinson, NE SW Section 25-16-31, drilling below 770 feet; Woolley & Jones' No. 1 McIntyre, C SE Section 21-17-30, fishing for pipe.

Lea County

Cap Rock Oil & Gas Co.'s No. 1 Leonard & Levers, SE Section 11-16-32, drilling at 2,750 feet; Covert's No. 1, NE NE Section 15-21-33, shut down in salt at 3,000 feet; Exploration company's No. 1, NE, Section 25-19-35, fishing for two strings of tools at 865 feet; Henderson, Dexter & Blair, Inc.'s No. 1 Wyatt, SW SW Section 34-17-33, drilling at 4,875 feet, 1,000,000 feet gas, 2,000 feet oil in hole; Holmes, Huey's No. 1, Section 18-12-35, temporarily shut down at 2,200 feet; Inglefield & Bridges' No. 1, Section 4-17-34, rebuilding derrick; Maljamar Oil & Gas Corp.'s No. 1 Beardsley permit, SW NW Section 15-17-32, ready to spud. A. D. Morton's No. 1, SW SW Section 28-11-38, location made; Ohio Oil Co.'s No. 1 William Mitchell, NE cor. SW Section 18-17-32, being plugged; Texas Production Co.'s No. 1 Jackson, SE cor. Section 4-20-34, ready to spud; Texas Production Co.'s No. 1 Rhodes, NW Section 22-26-37, drilling at 625 feet.

Chaves County

Arena Oil Co.'s No. 1, NE Section 18-13-31, rigging up; Buffalo, Roswell Co.'s No. 1, Section 24-11-27, drilling below 4,040 feet; Delmar Oil Co.'s No. 1, Section 22-11-26, abandoned at 2,000 feet; Gibson Oil Corp.'s No. 1 Forsyth, C NE Section 8-11-23, reported preparing to start operations at 650 feet; The Texas Company's No. 1 Dunken Dome, SW Section 29-17-18, drilling past bailer at 3,370 feet.

Curry County

Frio Oil Co's No. 2 Saunders, Section 11-5n-35e, underreaming 10-inch casing at 1,165 feet; Hasson Petroleum Co.'s No. 1 Laird, Section 22-8 36, rigging up; Steinberger No. 1, C NE Section 21-3n-35e, shut down waiting 10-inch casing at 1,100 feet.

Quay County

Argo Oil Co.'s No. 1, Section 5-7-31, drilling at 2,535 feet; Gibson Oil Co.'s No. 1, NW Section 25-8-32, pulling pipe at 1,432 feet; Ohio Oil Co.'s No. 1, Section 24-7n-29e, drilling at 1,170 feet.

DeBaca County

McAdoo Petroleum Corp.'s No. 1 State, Section 16-1-27, shut down at 3,400 feet.

CALIFORNIA FIELDS

(Continued from Page 56)

4,075 feet. The Elbe Oil Co.'s shallow wildcat near Edison, in Kern County, is reported to have had a show at 1,653 feet. This may prove another shallow field comparable to Mount Poso and the old Kern River district. The Chanslor-Canfield Midway Oil Co. has not yet picked up any surface showings in its No. 1 Quinn at Delano, but the well is hardly deep enough. Many larger companies hold protective acreage in this section, including the Standard with 260 acres and the Shell with 500 acres. The Marland is also well protected but does not contemplate any prospecting work. The only development of interest in the Kettleman Hills section was the picking up of a shallow tar sand by the Milham in Section 2-22-17 but, since it did not warrant a test, drilling was continued. The Milham has two holes under way at Buttonwillow in addition to its operations at Kettleman Hills. None of the several tests under way in Ventura County showed any change for the better, although E. A. Parkford's No. 1 Strathern ran across some free gas and a few rainbows at 2,580 feet. In northern California, neither the Shell's No. 1 Cowell in San Mateo County nor No. 1 Murphy of the same company in Sonoma County showed any evidences of resulting in production. The Marland's wildcat on Jacalitos Dome, near Coalinga in Fresno County, is down 4,275 feet with only one minor show to its credit. This is not discouraging as this district calls for deep drilling. Ralph Arnold was pretty well sold on this area at one time and, it is understood, has been holding some protective acreage for more than a year.

LOUISIANA-ARKANSAS

(Continued from Page 46)

water its No. 5 Wemple, Section 14. This test had just been started and is only at a depth of 98 feet. M. I. Morgan cemented 6-inch casing at 3,140 feet in No. 8 Glassell, Section 10. In Section 28-20-16, Gulf Refining Co. completed No. 266 Ferry Lake at 2,260 feet pumping 25 bbls. daily. The Texas Company's No. 1 Hardy, Section 10, also has been completed but is pumping only 5 bbls. from a total depth of 2,309 feet. Gulf Refining Co.'s No. 268 Ferry Lake, Section 22, is drilling in blue gummy shale at 1,950 feet.

Gilliam Syndicate's No. 1 Taylor, Section 17-21-14, is sand pumping at 914 feet. Magnolia Petroleum Co.'s No. 4 Planters, Section 7, is drilling limy shale at 2,348 feet. Ohio Oil Co. is drilling at 2,726 feet in No. 1 Moodie Fortner, Section 5-22-16. Standish Oil & Refining Co. is to standardize No. 11 Allen, Section 23-22-15. The hole is at a total depth of 1,055 feet.

LaSalle Parish

Louisiana Oil & Refining Corp. cemented 6-inch casing at 1,525 feet in No. B-37 Tremont, Section 25-10-1e, Urania Field. Wingfield and associates also cemented 6-inch casing in No. 1 Gibson, Section 2-9-1e, but at 1,420 feet.

Monroe District

The Monroe district got two new gas wells during the week in Louisiana Development Co.'s No. 38 fee, Section 21-20-5e, making an estimated 12,500,000 feet from sand at 2,257 feet, and the Louisiana Gas Products Co.'s No. 5 Dewdrop, Section 20-20-5e, making 5,000,000 feet from a total depth of 2,280 feet. The former is in Morehouse Parish and the latter in Ouachita Parish. In Union Parish, R. W. Rhodes abandoned as dry No. 1 Futch, Section 28-23-2w. Total depth of this was 2,760 feet.

Falcon Drilling Co. has a derrick up for No. 1 Gladney, Section 5-21-7e, Morehouse Parish. All other operations in the Monroe district were at a standstill during the week because of floods.

Webster Parish

Magnolia Petroleum Co. is drilling in shale at 1,130 feet in No. 3 Cox, Section 23-21-10. In Section 21, the same company started drilling No. 1 Marshall. The 10¼-inch plug cemented at 327 feet was drilled out and the test now it at 726 feet. Northwest Louisiana Gas Co. is drilling at 3,845 feet in No. 1 Coyle, Section 22, and in this same section Ohio Oil Co. is rigging up to drill a second hole at No. 4 Bank, the first hole being abandoned last week.

ARKANSAS

Union County

Brown and associates are drilling at 1,400 feet in No. 1 Slaughter, Section 2-17-16, Lisbon area, Mountz and associates in the main El Dorado Pool are drilling at 1,302 feet in Section 8-18-15.

The Norphlet area of Smackover got Union County's only completion of the week in proven fields. This was Gulf Refining Co.'s No. 44 Hardy-Murphy, Section 3-16-15, which pumped 90 bbls., 4 per cent salt water, the first 15 hours from sand at 2,365-75 feet. Developments in the Norphlet area were marked by several wells starting to drill deeper as a result of the completion the previous week of Stewart and associates No. 8 Murphy, Section 9-16-15, from the new fourth sand making 1,000 bbls. of 30 gravity crude. Sam Richardson in Section 10-16-15 is arranging to deepen No. 5 Lawton. This well was completed at 2,616 feet flowing 80 bbls. of oil and making 8,000,000 feet of gas. E. M. Jones also is arranging to deepen No. 4 Murphy, Section 17, completed in February as an 8,000,000-foot gasser. Stewart and associates are to deepen No. 5 Murphy, Section 9, completed last August at 2,446 feet flowing 700 bbls., 75 per cent salt water.

Humble Oil and Refining Co.'s No. 2-B Flenniken, Section 9-16-15, which is in the fourth sand at 2,776 feet, is standing 1,900 feet in heavy oil. Keen & Woolf's No. 5 Murphy, same section, is being bailed for a test at 2,720 feet. It tested only a show of oil at 2,715 feet. The same operators are building a derrick for No. 6 Murphy, same section. National Gas & Fuel Corp. has started a new test in this section in No. A-1 Bilyew, which is being drilled at 300 feet. The same company also completed a derrick for No. F-5 Murphy. Ohio Oil Co. cemented 4¼-inch casing at 2,696 feet in No. 6 Murphy, same section. This is an old well drilling deeper. Peer Oil Corp. is coring at 2,786 feet in B-1 Palmer.

In Section 10-16-15, Humble Oil & Refining Co. is drilling at 1,500 feet in No. 10 Pate. Lion Oil & Refining Co. is drilling a 5 3/16-inch plug cemented at 2,391 feet in No. 9-A Flenniken. It cemented 6-inch casing at 2,390 feet in No. A-11 Lawton. In Section 17, Magnolia Petroleum Co. cemented 8¼-inch casing at 2,642 feet in No. 6 Wilson. J. J. O'Brien has set 8¼-inch casing at 2,640 feet in No. 1 Saxon, Section 16-16-16.

All these operations are in the Norphlet area. In the Louann section to the west, W. H. Gilliland is coring at 2,529 feet in No. B-1 Hodges, Section 1-16-17. Magnolia Petroleum Co. is waiting on a standard rig for No. 2 Crawford, Section 8-16-16. It has 200 feet of oil in the hole from a broken sand at 2,606-24 feet. In Section 7, the same company cemented 6⅝-inch casing at 2,666 feet in No. 3 Freeman. Magnolia Petroleum Co. is drilling at 2,006 feet in No. 1 Union Lumber Co., Section 21.

Ouachita County

In Section 13-15-17, Ouachita County, but also in the Louann district, Copenhaven and associates are drilling at 1,890 feet in No. 3 Berg. Middlesex Oil Co. has a fishing job at 2,150 feet in No. 5 Shirey, Section 36.

Exchange Ojl Co. has a rig up for No. 3 Umstead, Section 4-16-15, on the Ouachita County side of the Norphlet Field. Gulf Refining Co cemented 6⅝-inch casing at 2,351 feet in No. 11 Bennett, Section 33-15-15. Marine Oil Co. milled out casing at 2,235 feet and has cemented a short string of 4½-inch casing at 2,275 feet.

In the Stephens Pool, southwestern Ouachita County, Magnolia Petroleum Co. is preparing to deepen No. 2 Gosden, Section 15-15-19, which tested salt water at 1,546-48 feet.

Nevada County

Fruen and associates' No. 1 Rhodes, Section 22-12-21, has been shut down at 2,050 feet. Humble Oil & Refining Co.'s No. 4 Bodcau, Section 9-15-22, which tested salt water at 3,596 feet, is drilling deeper in sand at 3,606 feet.

SOUTHWEST WILDCATS

(Continued from Page 51)

Hamilton Subdivision, at 158 feet to south line and 363 feet to west line of R. Holbien land, is drilling at 1,400 feet.

Webb County

Killam-Maddox No. 1 Bruni, Survey No. 4, Block 5, located 150 feet to northeast and southeast lines, which blew in a gasser at 1,400 feet from gas sand at 538 feet and ran wild, has been mudded off and casing is being set. Cintex Petroleum Co.'s No. 1 Peal, Survey No. 78, Block 5, located 150 feet to SE cor., is drilling at 2,730 feet. O. W. Killam's No. 1 Billings, SE NW Survey No. 43, located 150 feet to south lines and 750 feet to west lines, is drilling at 2,550 feet.

Starr County

Commonwealth Oil Co.'s No. 1 Garcia, Survey No. 538, located 2,722 feet to south line and 2,102 feet to west lines, is to resume drilling at 140 feet. Southern Exploration Co.'s No. 2 Russell, Share No. 173-B, Porcion No. 69, located 150 feet to north line and 950 feet to west line, is rigging up. Milham Corp.'s No. 2 Salinas, Porcion 111, SE cor., is drilling at 3,502 feet. Sterling & Suladie's No. 1 Yzaguirre, Block 8, located 1,320 feet to SW cor., is shut down at 3,011 feet.

Zapata County

J. H. Winch No. 1 Bustamente, Share No. 10, Block 8, is location at 150 feet to northeast and southeast lines, machinery being moved on.

Bexar County

W. L. McClanahan's No. 5 Sodrok, Adkins Field, located 300 feet east of No. 4, has been spudded in. A. R. Beal, trustee, No. 1-A Ackerman, Survey No. 133½, is changing to heavier rig, total depth around 200 feet.

Bastrop County

The Texas Company's No. 1 Goertz, Survey No. 349, located 200 feet to west line and 150 feet to south line, is drilling at below 1,200 feet.

Bee County

D. Hewitt is rigging up on the G. A. Ray lease. W. S. Poole's No. 1 J. C.

(Continued on Page 139)

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PRINCIPLES UNDERLYING SODA PROCESS

(Continued from Page 31)

remains the difficult task of collecting and recovering it. It will not drain out but must be pushed forward through a very long and torturous and extremely fine channel to some outlet well. Viscosity restrains its movements and that viscosity is about 20 times as great in front of it as behind it. The pressure gradient may urge it directly toward the outlet well or in a direction nearly at right angles to that line. Near the intake well it has had a very uneven start due to the cracks produced by shooting. Unevenness in the texture of the sand leads it to flow in various directions. If urged forward too rapidly, pockets are left behind where the solution did not have time to enter and fulfill its functions. Between parallel vertical channels in homogeneous sand, all the oil would be recovered, the physical problem is to make the most of conditions as they exist between wells.

In a previous paper[2] it has been shown that certain pressure-velocity relations exist in the crooked and irregular pores of sands comparable with those existing in straight uniform pores. The effective pore diameter is roughly one-fifth of the diameter of the smallest grains present in appreciable proportion. Due to the angular walls, the effective surface tension is less than half that in a straight channel. The effective resistance to flow may be greatly (one-half) reduced by a very light coating of alkali on the grains. The effective pore space (conducting) is about three-fifths of the total.

Velocity of Travel

The mean velocity with which a fluid travels along a tube is proportional to the cross section, the pressure gradient and to the fluidity of the liquid. The mean velocity is the effective average as measured by the delivery, actual velocities varying from a maximum in the center to zero against the wall. The pressure gradient is the fall in pressure per unit length expressed in dynes per cm^2 per cm in C.G.S. units, in pounds per square inch per foot or in feet of head per foot of drive which is the same as cm head per cm of drive (G). The fluidity (F) of a liquid is the reciprocal of its viscosity. The relation between mean velocity V in cm/sec., radius R in cm and head gradient G is

$$V = GR^2F/8$$

When the advance of a flood is 15 feet per month under a 600-foot head of water driving 150 feet between intake and outlet wells, $G = 600/150 = 4$ and $V = 173 \times 10^{-6}$ cm/sec. Hence if $F = 25$, $R^2 = 8V/GF = 13.8 \times 10^{-6}$ or $R = .0037$ cm. The effective mean pore diameter is therefore .074 mm or .003 inch.

The delivery from a pore is the mean velocity of fluid through it times the cross section or $D = \pi R^4FG/8$ in cc per second. If there are n such pores per unit area, the effective pore space is $n\pi R^2$. This was found by test to be considerably less than the total pore space (about three-fifths), the transverse pores not taking much part in the conduction of fluid. The total flow of fluid through porous rock is therefore

$$PR^2GF/8 \text{ cc/sec/cm}^3$$

when P is the effective pore space (about 0.6 of the total).

Best Rate of Advance

The percentage of voids in sand is independent of grain or pore size but the rate of flow of a fluid through it varies inversely as the square of the pore diameter. Capillary forces vary inversely as the pore diameter. They need no assistance and brook no interference in their work of displacing oil from the sand. They can even exert a definite pull forward amounting to several inches head but are quite powerless to drag and push forward the water and oil in some hundreds of feet of capillary. The driving water has to supply the force to accomplish this else the advance will be extremely slow. The by-passing of oil by too rapid advance appears to be due to solution not having time to penetrate and fill cross channels and small isolated pockets. Much of the same thing happens when tighter and looser strata are being flushed by the same flood, the rate of advance must be slowed down or else the tighter strata will not be flushed at all. The problem of the best rate of advance is an economic one, for efficiency, the slower the drive the better.

Extremely fine pores and crevices of course do not flush out at all for the adsorbed layer of either water or oil is stationary and clogs the pores. This layer is roughly one one-hundredth micron deep and a pore in which occur constrictions of not much over twice that diameter or thickness will not conduct water or oil. Hence the practical limit for flushing is a sand or silt in which the smaller grains are less than about 0.1 mm, passing a 150-mesh screen. Oil or water will readily penetrate and wet a silt all of which is finer than 300-mesh (.052 mm) by crawling in a thin layer over surfaces or by vaporizing and condensing but the fluid, once in, is practically immovable.

Drainage by Gravity

Drainage by gravity is an important factor in coarser oil sands but is negligible in the finer. A liquid of density d and surface tension T in pores of effective radius R will be pulled up to a height H given by

$$H = 2T/dgR$$

when g is 980 dynes/gram. H and R are in cm, T in dynes/cm and d in gms/cc. Tests of this formula with oil, water and variously treated sands of various sizes were described in the previous paper on porous solids (l.c.). The behavior of fluids in irregular pores obeys the same laws as in uniform tubes, the effective diameter being about one-fifth the minimum grain diameter and the effective surface tension one-fifth to one-third its value for straight walls. T also varies by a factor of 2 or 3 with the previous treatment (drying, acid or alkali treatment, etc.) of the sand grains.

With $2T = 50$ and an effective radius of pore of .0018 cm corresponding to sand 65-100 mesh, water will fill the pores to a height of 27 cm and oil about 10 cm. Either will rise in finer pores in inverse proportion to diameter. Only in the finest pores will either rise to 30 feet or stand steadily at that height filling the pores. Oil will not drain out of a lump of even coarse sand in the open air because of the inward capillary pull at the surface but conditions are far different underground. In a thick bed of average sand probably half the oil could be removed by drainage with long continued pumping. When water is let into an oil saturated sand, the resultant action is the combined effect of gravity and surface tension. Water and oil differ only slightly in density but very greatly in surface tension, hence the flushing action will be about equal up, down and horizontally as long as the supply is kept up. Only on long standing will the water assume a position below the oil. Doubtless some very loose sands and others highly stratified in tighter and looser layers could best be flushed from the bottom upward.

Selection of Wells

After a producing tract of oil sand has been treated for some time with soda solution there is doubtless a marked tendency for the oil to accumulate in the upper levels in certain locations favored by drainage. Wells in such locations should be made permanent pumping wells. Permanent intake wells are usually located in the higher thinner parts of the sands. The poorest producing wells are thus frequently the best for permanent intakes. With intake and pumping wells properly located and sufficient soda (15 tons per acre) put down, there is every reason to believe that a high percentage of oil may be recovered within a reasonable time.

This paper is the second of three on the soda process. The third and final paper of the series is to deal with the development of the process, the results to date, of the field tests and with the patent situation.

[2]Movement of Fluids in Porous Solids. The Oil and Gas Journal, December 23, 1926.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 39)

Stivers et al's No. 1 Snodgrass, C NW Sec. 475, Blk. 97, H & T. C. Sur ..... S.D. for 8-in., 2,195 ft.

BREWSTER COUNTY

McPhail & Kemper's No. 1 McIntyre ..... Rigging up machine.

COCHRAN COUNTY

J. C. Whicker's No. 1 G. C. Landon, 300 ft. N and 5,800 ft. E SW cor. League 154 Sherman Co. Sch. Ld. ..... Shut down 1,550 ft.

COKE COUNTY

Lipan Oil Co.'s No. 1 S. M. Conner ..... S.D. for 12-in., 1,133 ft.

CONCHO COUNTY

Harry Adams et al's No. 1 Price, C SW Sec. 78, Blk. 71, Alex Gregg Sur. ..... Drilling, 280 ft.

Associated Pet. Co.'s No. 1 Sam Waring, SW cor. Jacob Getthardt Sur. No. 2,025 ..... Shut down 2,300 ft.; will skid.

Arkansas Fuel Co.'s No. 1 Hartgrove, SW cor. NW Sec. 49, Blk. 70, H. & T. C. Sur., 12 miles E of Paintrock .. 1,000,000 ft. gas 1,100-10 ft.; 4,500,000 ft. gas 1,142-47 ft.; small show oil in sandy lime 2,165 ft.; show oil 2,454-80 ft.; show oil and 200,000 ft. gas 2,494-2,512 ft.; bailed 8 bbls.; T.D., 2,830 ft., setting 5-in.

The Exploration Co.'s No. 1 Hartgrove, Blk. 240, J. Schouch Sur. ..... Drilling, 1,920 ft.

Gene Mays and others' No. 1 Hartgrove, NW SW Sec. 312, Mrs. A. Schmidt Sur. A-1,173 ..... Flowed salt water with little gas 1,550 ft; S.D., 1,950 ft.

COTTLE COUNTY

Sun Oil Co.'s No. 1 Tom Burnett, C NW SE Sec. 6, Blk. L. S. P. R. R. Sur ..... Drilling, 720 ft.

CRANE COUNTY

Gulf Prod. Co.'s No. 1 W. N. Waddell, NE cor. Sec. 12, Blk. B-25, School Land ..... Drilling 1,102 ft. with core drill machine.

Zweifel and others' No. 1 W. H. Cowden, SE SE Sec. 16, Blk. X, C. C. S. D. Sur ..... Hole full sulphur water 3,050 ft.; shut down 3,301 ft.; flowing sulphur water.

CROCKETT COUNTY

Anchor Oil Co. (Cumberland) No. 1 Couch, C NE Sec. 18, Blk. QR, D. & S. E. T. R. R. Sur ..... Shut down 3,075 ft.

V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I. & G. N. Sur ..... Drilling, 1,320 ft.

George A. Henshaw, Jr., No. 1 University, 1,320 feet from S. and W. lines SW Sec. 5, Blk. 14, University Sur., elev. 2,297 ft.; top lime 1,695 ft. ..... Top salt 450 ft.; small show oil and gas 1,100-15 ft.; 300 ft. sulphur water 1,668 ft.; hole full sulphur water 1,725 ft; plugging to abandon 1,890 ft.

J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur. . Fishing for 18 joints 8-in.; total depth 2,535 ft; shut down.

Magnolia Pet. Co.'s No. 2 Shannon, SE SE Sec. 9, Blk. BB, E. L. R. R. Sur., elev. 2,670 ft. ..... Hole full sulphur water 2,390 ft.; small show oil 2,385-90 and 2,-992 ft; drlg., 3,515 ft.

William Shaffer and others' No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur., elev. 2,344 ft. ..... T.D., 2,344 ft.; plugged back to 2,208 ft; shot 10 qts. 2,170-95 ft.; S.D.

William Schaffer et al's No. 2 University, 1,350 ft. N and 2,610 ft. E of SW cor. Sec. 9, Blk. 47, Univer. Land. . Drilling, 165 ft.

W. W. Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 150, Blk. O. G. H. & S. A. Sur., elev. 2,105 ft. ..... Rainbow show 454 and 540 ft; S.D. for 10-in., 1,375 ft.

P. H. Williams' No. 1 L. P. Powell ..... Top salt, 1,052 ft; drlg., 1,610 ft.

World Oil Co.'s No. 1 Schneeman, N and W SE cor. Sec. 57, Blk. BB, G. C. & S. F. Sur., elev. 2,679 ft. ..... Top salt 1,035 ft.; sulphur water 2,490 ft.; T.D. 2,575 ft.; trying to swedge pipe.

Young & Cromwell's No. 1 University, C SE Sec. 23, Blk. 31, University, elev. 2,395 ft. ..... Pay 1,160-65 ft.; shows at 1,505 and 1,574 ft.; hole full sulphur water 1,930 ft. and 1,962 ft.; S.D., 2,200 ft.

CROSBY COUNTY

El Capitan Oil Co.'s No. 1 O. L. Slaton, NW cor. SW Sec. 5, Blk. B-9, E. L. & R. R. Sur. ..... S.D., 3,510 ft.; contract depth.

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 29, Blk. 62, Pub. Sch. Ld. Sur. ..... S.D., 400 ft.

DICKENS COUNTY

Bowser Mickels and others' No. 1 Pitchford ranch ..... S.D., 3,250 ft.; contract depth; may deepen.

Moutray Oil Co. and Clancy & English's No. 1 Jones, SE cor. NW Sec. 311, Blk. 1, H. & G. N. Sur ..... S.D., 3,550 ft.; to deepen.

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, B-16, School Land ..... Top salt, 870 ft; drlg., 1,200 ft.

J. S. Cosden et al's No. 3 G. W. Connell-A ..... Rigging up.

Exploration Co.'s No. 1 J. D. Slator, C SW Sec. 10, Blk. 45, T. & P. Sur., T-1-S ..... S.D. for orders, 4,435 ft.

FISHER COUNTY

Barber Oil Co.'s (was Mason Oil Co.'s) No. 1 W. A. Cross. Hole full salt water, 2,350-70 ft; S.D.

California Co.'s No. 1 R. G. Anderson, Sec. 22, Blk. 20, T. & P. Sur ..... Hole full sulphur water, 2,500 ft.; salt water, 2,801-12 ft.; hole full salt and sulphur water 3,118-20 ft. and 3,208 ft; drlg., 3,370 ft.

California Co.'s No. 1 Maggenheimer, SE cor. SW Sec. 15, Blk. 1, H. T. & B. Sur ..... Hole full sulphur water 2,826-2,-937 ft.; hole full water 2,975-3,-000 ft. and 3,055-70 ft; S.D. for orders, 3,550 ft.

Zoch & McCamey and Marland Oil Co.'s No. 1 Lanius-A, (was Danciger O. & R. Co.'s No. 1 Lanius), NE cor. SE, Sec. 15, Blk. Y. T. & P. Sur. ..... Drlg., 3,660 ft.

Fred Phillips' No. 1 C. M. Webb, 756 ft. S and 1,050 ft. W NE cor. Sec. 2, Blk. K ..... Hole full salt water 2,220-40 ft. and 2,637 ft; S.D., 2,820 ft. for repairs.

Hucony Gas Co.'s No. 1 Langford, SW SW Sec. 7, Blk. 31, T. & P. Sur ..... Small show oil 2,350 ft. and 2,-808-09 ft. and 2,826-27 ft.; no gas; set 6-in. 2,728 ft.; small show oil 2,947-50 ft; setting 5-in., 3,187 ft.

Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur ..... Fighting cave, 1,550 ft.

Marland Oil Co.'s (was Caldwell and others') No. 1 Rochelle, SW cor. NE Sec. 184, Blk. 3, T. & P. Sur. . Hole full salt water 3,565-80 ft.; drlg. wet hole, 3,700 ft.

Marland Oil Co. and Texon's No. 1 McCall ..... Rig.

Marland Oil Co. and Vacuum Oil Co.'s No. 1 J. H. R. Lagow ..... Rigging up.

R. W. Raney's No. 2 Maberry ..... S.D. for orders, 2,725 ft.

Sinclair Oil & Gas Co.'s (was Bourdon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur. ..... S.D., 570 ft. for casing.

Stearns & Streeter's No. 1 W. A. Howe, N and E SW cor. NE Sec. 12, Blk. 23, T. & P. Sur. ..... Drlg., 3,470 ft.

FOARD COUNTY

Humble O. & R. and Navarro Oil Co.'s No. 1 L. McAdams, C S ½ Sec. 37, Blk. L. S. P. Sur ..... S.D. for gas 2,466 ft.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 137, Blk. 5, H. & G. N. Sur. ..... Small show oil in gray lime 1,-884-1,902 ft; S.D., 2,500 ft.

Pandem Oil Co.'s No. 1 Justice, SW cor. NW Sec. 3, Blk. 6, H. & G. N. Sur. ..... Rig.

GLASSCOCK COUNTY

Green et al's No. 1 F. G. Oxsheer ..... S.D., 200 ft.

World Oil Co. and J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Typ. 2-S, T. & P. Sur., elev. 2,553 ft. ..... Rigged up and S.D.

R. R. Penn et al's No. 1 W. P. Edwards, C SE Sec. 11, Blk. 34, Twp. 2-S, T. & P. Sur. ..... Drlg., 650 ft.

HALL COUNTY

Seifert and others' No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. ..... Spudded and S.D.

HOCKLEY COUNTY

El Capitan Oil Co.'s No. 1 Ellwood, SW cor. Sec. 55, Blk. A, R. M. Thompson Sur., 18 miles NW of Lubbock ..... S.D., 1,000 ft.

HOWARD COUNTY

Bowers et al's No. 1 Chester Jones, C SW Sec. 32, Blk. 27, T. & P. (3,200-ft. test) ..... Spudding, 200 ft.

Fred Carey et al's No. 1 G. O. Chalk, SE NW Sec. 124, Blk. 29 ..... Drlg., 800 ft.

Donoliee et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2-N, T. & P. Sur. ..... S.D., 1,519 ft. for water.

Francis & Brunson's No. 1 J. W. Furrh, C SW Sec. 11, Blk. 31, T. & P. Sur., T-1-S ..... Location.

F. H. E. Oil Co.'s No. 1 John Roberts ..... Drlg., 1,260 ft.

Godley Oil Co.'s No. 1 A. J. Hooks ..... Rigging up rotary.

Marland Oil Co. and Zoch's No. 1 Jones ..... Drlg., 150 ft.

Marland Oil Co.'s No. 1 J. B. Harding, C SE Sec. 19, Blk. 33, T. & P. Sur. ..... Sand, 3,163-87 ft.; T.D., 3,228 ft; 1,200 ft. oil.

L. C. Harrison et al's No. 1 Dora Roberts ..... T.D., 700 ft; S.D.

Marland Oil Co. & Zoch's No. 1 Guitar Est. No. 1 ..... Drlg., 810 ft.

Midwest Exploration Co.'s No. 1 H. R. Clay ..... Small show oil 1,705 ft; drlg., 1,-720 ft.

HARDEMAN COUNTY

Murchison Oil Co.'s No. 1 Mayfield ..... Rotary; drlg., 1,130 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 21 ..... S.D., 130 ft.

IRION COUNTY

Cash Dollar et al's No. 1 Abe Mayer, C NE Sec. 1, Blk. 10, S. P. R. R. Sur. ..... Drlg., 2,940 ft.

Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur. ..... S.D., 1,085 ft.

JEFF DAVIS COUNTY

Humble O. & R. Co.'s No. 1 Crecencio Flores, Sec. 34, Blk. 58, T. & P. Sur. T-8 ..... Rigging up.

J. K. Hughes Dev. Co.'s No. 1 J. Z. Means, 600 ft. from N line and 2,000 ft. from W line of M. Robinson Sur. No. 1 ..... Drlg., 2,825 ft.

JONES COUNTY

Atlantic O. P. Co. and Landreth's No. 2 Howell ..... Missed regular pay; S.D. 2,700 ft.

Bateman & Campbell's No. 1 Southard, C. NW NW Sec. 43, Deaf & Dumb Asylum Lands ..... S.D.; fish. tools, 1,990 ft.

Midwest Exploration Co.'s (was Campbell et al's) No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur., elev. 1,832 ft. ..... S.D., 1,860 ft.

Consolidated Oil Co.'s No. 1 Armand & Taylor, C S½ SW Sec. 7, Blk. 4, H. & T. C. Sur. ..... Hole full salt water 1,470-90 ft.; drlg., 2,405 ft; broken lime.

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands ..... Location.

Gault Brown et al's No. 1 Mrs. A. Zips, NE cor. NW Sec. 24, Blk. 14, T. & P. Sur. ..... Drlg., 1,700 ft.

Gibson & Johnson's No. 1 Largent, C SE Sec. 50, Blk. 149, Dewitt Co. School Land ..... S.D., 2,560 ft.

Gillette & Hickey's No. 1 M. E. Young, Tevanio Sur. No. 190 ..... S.D., 1,200 ft.

Grisham & Hunter & Wildman's No. 1 Mrs. F. G. Phillips (was Birchfield), 1,371 varas from S line and 2,720 varas from W line, Harrison Co. School Land No. 333 ..... Rainbow showing 2,758-65 ft., 2,-815-25 ft. and 2,860-70 ft; hole full salt water 2,970 ft.; fishing cas., 3,000 ft; drlg., 3,050 ft. (corrected).

Grisham & Hunter & Wildman's No. 1 Williams, Harrison Co. School Land, elev. 1,732 ft. ..... Brown sand 2,620-40 ft.; tested 4 bbls. oil and 3 bbls. water; drlg., 2,805 ft.

Hart & Cole's No. 1 Cranston, Sec. 10, Blk. 17, T. & P. Sur., elev. 1,701 ft. ..... Hole full salt water 2,650 ft.; S.D., 3,403 ft.

Hutson & Weaver's No. 1 Smith, Sec. 51, Blk. 18, T. & P. Sur. ..... S.D. for fuel, 700 ft.

Kirk & Brewer's No. 1 J. H. Milsap, Justo Rodrigues Sur., League 357 ..... Drlg., 1,875 ft.

Manhattan Oil Co.'s No. 1 S. W. King ..... Drlg., 300 ft.

Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ½ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur. ..... Small show oil 2,496 ft; drlg., 2,-545 ft.

Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280 ..... Drlg., 1,910 ft.

Mid-Continent Petroleum Corp.'s No. 1 H. Evans, NE cor. SE SE Sec. 44, S. P. R. R. Sur. ..... Drlg., 2,710 ft.

Phillips Pet. Co.'s No. 1 Thornton ..... Six bbls. water, 1,930-45 ft.; S.D., 2,945 ft.

Shaw & Rathke and others' No. 1 Bristow, SE SE Sec. 1, J. H. Gibson Sur. ..... S.D., 500 ft.

W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur., No. 2 ..... Drlg., 800 ft.

Stebbins Oil Co.'s No. 1 J. M. Higgs, Sec. 30, W. T. Scott Sur., elev. 1,624 ft. ..... Top Sedwick lime 1,265 ft.; swabbed 35 bbls. 1,599-1,604 ft.; deepened 1 ft. to 1,605 ft.; made flow of 25 bbls; pumped 60 bbls. first 13 hrs; rods parted.

Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands ..... S.D., 1,655 ft.

Tomberlin et al's No. 1 Oscar Clapp, CSL SW Sec. 37, Blk. 16, T. & P. Sur. ..... S.D. for water, 805 ft.

World Oil Co. and others' No. 1 A. W. Clark, SE cor. Sec. 15, Blk. 19, T. & P. Sur., elev. 1,839 ft. ..... Hole full salt water 1,975-2,010 ft; more salt water 2,305 ft; slight show oil 2,425-36 ft. and 2,660-70 ft; hole full sulphur water 2,930 ft; T.D., 2,956 ft; plug.

World Oil Co.'s No. 1 Boyd (was W. H. Lee), 12,700 ft. N and 2,130 ft. E of SW cor., Samuel Jones Sur. No. 266, elev. 1,729 ft. ..... T.D., 2,400 ft; C.O.

Zeigler and others' No. 1 Reeves, C SE SE Sec. 164, B. B. B. & C. Sur. ..... S.D., 1,750 ft.

KENT COUNTY

Douglas Oil Co.'s No. 1 Scoggins ..... S.D., 1,540 ft.

Marland Oil Co. and Texon O. & L. Co.'s No. 1 Bliby ..... Location.

KING COUNTY

Gibson & Johnson's No. 1 Burnett est. ..... Drlg., 1,210 ft.

Midwest No. 1 Patton ..... Drlg., 465 ft.

J. L. Pattison No. 1 Patton ..... Drlg., 1,470 ft.

Phillips Petroleum No. 1 ..... Drlg., 2,420 ft.

Sinclair ..... Drlg., 565 ft.

White Eagle No. 1 ..... Drlg., 1,400 ft.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Jones, CSL Sec. 111, Blk. C, H. & T. C. Sur. ..... Drlg., 2,570 ft.

Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 224, Blk. 44, elev. 1,441 ft. ..... Drlg., 2,600 ft.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. south and 2,590 ft. west of NE cor. Sec. 31, Blk. 4 ..... Fish. 12-in., 1,150 ft.

Humble O. & R. Co.'s No. 1 Goode, 1,940 ft. S and 200 ft. W of NE cor. Sec. 7, H. T. & B. Sur. ..... Drlg., 780 ft.

The Texas Company's No. 1 Teague ..... New location.

LOVING COUNTY

Kingwood Oil Co.'s No. 1 T. O. Moore, C NE Sec. 2, Blk. G-25, Pub. Sch. Ld. ..... Spudding.

Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur. ..... Drlg., 450 ft.

LUBBOCK COUNTY

Sam Arnett and others' No. 1 Bowles Ranch ..... S.D., 400 ft.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2 ..... S.D., 1,400 ft.

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur. ..... S.D., 415 ft.

Clark and others' No. 1 Klothman, NW NW Sec. 77, Kulman Sur. ..... S.D., 580 ft.

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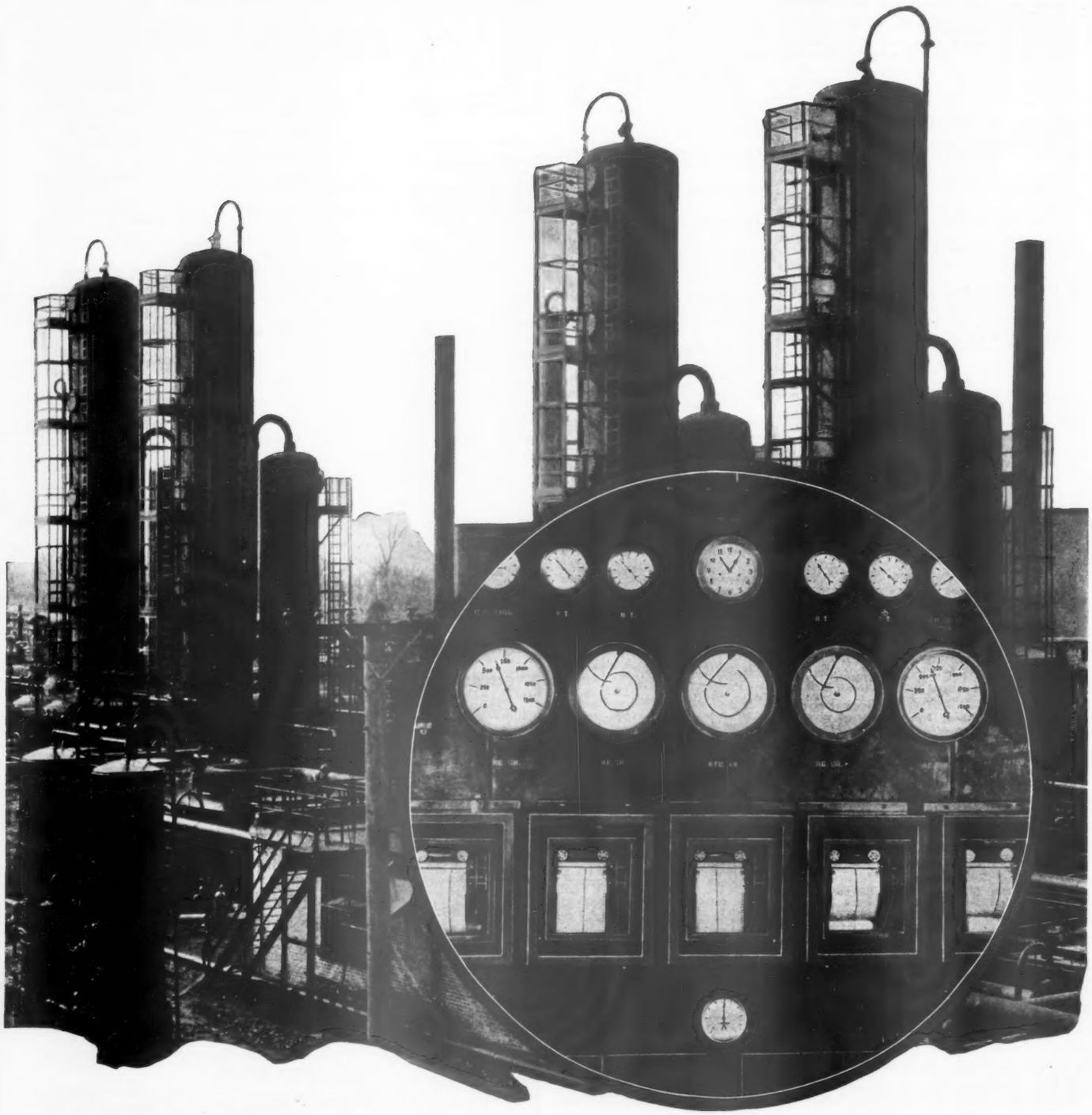

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Temperature Control

MITCHELL COUNTY

California Co.'s No. 1 E. Morrison, Lease 1. — Drlg., 2,920 ft.
B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur. — S.D., 125 ft.
Robert Thraves' No. 1 C. Way. — Rig.
Paul Teas' No. 1 Ed Strain. — Drlg., 2,610 ft.
Morrison & Thompson's No. 1 Griffith, SE SE Sec. 45, Blk. 29, T. & P. Sur., T-1-N. — Small show oil in sandy lime 2,715-20 ft. and 2,750-55 ft; drlg. 3,035 ft.

B. E. Walter and others' No. 1 J. E. Dollen, NW cor SW Sec. 11, Blk. 27, T. & P. Sur. — S.D., 3,955 ft.; hole full sulphur water.

J. C. Yancey's No. 1 Saunders, 400 ft. N and 1,700 ft. E of SW cor. Sec. 25, Blk. 25, T. & P. Sur. — Spudded and S.D.

MOTLEY COUNTY

Chechaco Oil Co.'s (J. W. Pennington et al of Amarillo) No. 1 J. W. Owens, NW cor. Sec. 26, Blk. 4 (15,000-acre solid block) — S.D., 1,480 ft.
Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. — Rig on ground.

NOLAN COUNTY

A. G. Malone et al's No. 1 J. B. Carlyle — Location.
A. G. Malone et al's No. 1 M. C. McElmurry — Spudded and S.D.
J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth — S.D., 960 ft. for water.
Thomas & Reynold's No. 1 Allen, C. W. ½ NW Sec. 58, Blk. X, T. & P. Sur. — Drlg., 1,910 ft.
Herbert Oil Co.'s (was McClesky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. — Rigged up and S.D.
Phillips Pet. Co.'s No. 1 Scott, Sec. 58, Blk. 21, T. & P. Sur. — Drlg., 2,210 ft.
Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. — S.D., 1,310 ft. for casing.

PECOS COUNTY

Geo. Anderson's No. 1 Sherbino Bros., CWL NW, Sec. 43, Blk. C-4, G. C. & S. F. Sur. — New location.
Allsman & Bell's No. 1 Pecos River Bed, 178 ft. E and 117 ft. S of NE cor. Sec. 60, Blk. 1 — Moving in material.
Arkansas Fuel Co.'s No. 1 H. Holmes ,2,040 ft south and 1,520 ft. east NW cor. Sec. 16, Blk. 178, T. C. R. R. Sur., elev. 2,507 ft. — Top salt 640 ft; bottom salt 1,104 ft; gas show, 1,780-92 ft; show oil, 2,132 ft.

Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. Sur., elev. 2,556 ft. — T.D., 3,115 ft; flowing sulphur water; fish. for 36 joints 6-in.

Buell and others' No. 1 Batcheler, C N half NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. — Show oil 1,700 ft; flowed sulphur water 1,775 ft; repairing engine 2,045 ft.

Buell & Hagan's No. 1 McKenzie, Sec. 8, Blk. 604, Mrs. A. L. Canon Sur., elev. 3,009 ft. — Top salt, 1,170 ft; drlg., 1,460 ft.
Buell & Hagan's No. 1 Jasper, 1 mile south and west NE cor. Jasper Co. School Land No. 104 — Location.
California Co.'s No. 1 Union Land Co., C NE NW NW Sec. 10, Blk. 141, T. C. R. R. Sur., elev. 2,615 ft. — Top salt 824 ft.; top dolomite 1,442 ft; 2 bailers sulphur water per hr. 1,550 ft; sulphur water 1,737 ft; flowing sulphur water 1,740 ft; try to mud off water, 1,850 ft.

Cromwell & Kimberlin's No. 1 Blackman., C NW Sec. 24, Blk. 3, H. & T. C. Sur., elev. 2,393 ft. — Top salt, 890 ft; drlg., 1,840 ft. in lime.
M. C. Dibble & Hale's No. 1 Bonebrake — Rigged up and S.D.
Geo. A. Henshaw, Jr., No. 1 I. G. Yates, 330 ft. S and 1,650 ft. E of NW cor. Sec. 544, Blk. 1, I. & G. N. Sur. — Top salt, 525 ft; drlg., 1,140 ft.; anhydrite.

Humble O. & R. Co. and Kirby Oil Co.'s No. 1 J. T. McElroy, NW SW SE Sec. 124, Blk. 10, H. & G. N. Sur. — Drlg., 210 ft.
Del Rio Drilling Synd.'s No. 1 K. C. & Ft. Stockton, C SW, Sec. 19, Blk. 178, T. C. Sur. — S.D., 740 ft.
Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur. — Location.
Kershaw & Livingston's No. 1 Cannon, SW cor. NE Sec. 54, Blk. A-2, T. C. R. R. Sur. — Location.
Mid-Kansas O. & G. Co.'s No. 1 Smith Taylor, elev. 2,645 ft. — S.D. for water, 490 ft.
Mid-Kansas O. & G. Co.'s No. 4 Yates A, elev. 2,552 ft. — T.D., 1,103 ft; run 6-in.
Mid-Kansas O. & G. Co.'s No. 1 Yates C (was No. 1 Acct. 3), elev. 2,327 ft. — Fish. tools, 860 ft.
Olean Pet. Co.'s No. 1 Arthur Harral, C SE, Sec. 98, Blk. A-2, T. C. R. R. Sur. — New location.
Olean Pet. Co.'s No. 1 G. A. Harral, C SW, Sec. 82, Blk. B-3, G. C. & S. F. Sur. — New location.
Olean Pet. Co.'s No. 1 Sherbino Bros., C NW, Sec. 31, Blk. C-4, G. C. & S. F. Sur. — New location.
Pecos Big 3 Oil Co.'s No. 1 Robertson — Location.
Pecos Big 3 Oil Co.'s No. 1 I. G. Yates — Location.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. Ft. Stockton — S.D., 3,440 ft.
Quinby Oil Co.'s No. 2 Bennett, C NW 592, Blk. 105, G. C. & S. F. Sur., elev. 2,560 ft. — 200 ft. oil in hole from 1,216 ft; shot 20 qts. 1,208-20 ft; hole full sulphur water, 1,452 ft; S. D. 1,457 ft.

Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. north and 1,320 ft. east SW cor. Sec. 593, Abst. 3,009 — Straightening hole, 575 ft.
Red Bank Oil Co.'s No. 1 Arthur Harral, C SE, Sec. 35, Blk. C-4, G. C. & S. F. Sur. — New location.
Seventy-Five Oil Co.'s No. 1 F. A. Perry, C SE NW, Sec. 19, Blk. 178, T. E. R. R. Sur. — New loc; rigging up.
W. R. Shankel et al's No. 1 I. G. Yates, CSL SW SE SE, Sec. 58, Blk. 1, I. & G. N. Sur. — New loc; rigging up.
Texon O. & L. Co.'s No. 2 I. G. Yates — Top salt, 430 ft; S.D., 1,096 ft.
Texon O. & L. Co.'s No. 3 I. G. Yates — Location.
Texon O. & L. Co. and Marland Oil Co.'s No. 1 Blakesley — Drlg., 780 ft.
John Droppiemann's No. 1 Mrs. L. Hershenson, Sec. 7, Blk. 51, T. & P. Sur. T-10 — Drlg., 1,420 ft.
World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, T. & St. L., elev. 3,425 ft. — Location.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle est. — (Reported abandoned in January) now U.R. 6-in.; T.D., 2,550 ft.

REAGAN COUNTY

The Texas Company's No. 2 J. D. Sugg, C Sec. 87, Blk. 2, T. & P. Sur. — Top salt 860 ft; top lime 2,110 ft; hole full sulphur water 2,130-50 ft; 1,000 ft. sulphur water 2,830-35 ft; drlg., 3,170 ft; contract depth, 3,200 ft.

Tidal Oil Co.'s No. 1 University, NW cor. NE Sec. 20, Blk. 8 — Top salt, 1,302 ft; drlg., 1,325 ft.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell, C SW Sec. 22, Blk. 58, T. & P. Sur., Twp. 8 — Run. 6-in., 3,535 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Pub. Sch. Ld. — Spudded 20 ft. and S.D.
Humble O. & R. Co.'s No. 1-B Kloh, C NE Sec. 47, Blk. 56, T. & P. Sur. T-2-S, elev. 2,781 ft. — 900 ft. sulphur water 1,760-1,800 ft; S.D. for repairs, 1,930 ft.

World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur., elev. 3,068 ft. — S.D., 1,610 ft; tools moved to No. 1 Duff.
World Oil Co.'s No. 1 Duff — Rigging up.

RUNNELS COUNTY

Associated Pet. Co.'s (was Bell & Moore's No. 1 W. W. King, 1,200 ft. W of NE cor. Lge. 14, J. V. Cobrera Sur. — Spudded and S.D.
Moore & Bell's No. 1 Ferguson, 2,640 ft. S and 1,320 ft. E of NW cor. F. J. Ford Sur. No. 152 — Spudded and S.D.
Lou Ladd et al's (was Frank Yates') No. 1 R. M. McMillan — Small show oil and gas 545-62 ft. and 590 ft; S.D. for casing shoe 1,400 ft; hole full salt water.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. D. Sur. — Spudded and S.D.
Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 25, Blk. M, G. H. & S. A. Sur. — Spudded and S.D.; drlg. water well.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson, NE NW SW, Sec. 101, Blk. 97, H. & T. C. Sur. — Tested 8 bbls. 1,745 ft; another pay at 3,402-07 ft; bailed 78 bbls. oil in 4 hrs. and bailed dry; drlg., 4,210 ft.

STERLING COUNTY

J. P. Williams' No. 1 Clark, NE NE SW Sec. 7, Blk. 6, G. C. & S. F. Sur. — S.D., 1,020 ft. for casing.
L. Little's No. 1 Fisher Bros. — Rigging up machine.
Orr et al's No. 1 Neal Reed, CNL, Sec. 15, Blk. 30, W. & N. W. Sur. — New location.

STONEWALL COUNTY

McCamey & Zoch's No. 1 J. Ward, C SW Sec. 153, Mrs. Ward Dobbs Sur., 3 miles NW of Aspermont — Drlg., 1,340 ft.

TAYLOR COUNTY

City of Abilene's No. 1 fee, NW SW SE Sec. 66, Lunatic Asylum — S.D., 2,264 ft.
Dorning & Perrine's No. 1 J. A. Hammer, C N 100 acres, Sec. 23, Blk. 19, T. & P. Sur.; elev. 1,904 ft. — S.D., 455 ft.
Gibson & Johnson's No. 1 Hendry — Drlg., 1,225 ft.
Grisham & Hunter's No. 1 D. D. Huddleston, CWL Lot 29, League 146, Grimes Co. Sch. Ld. — Small show oil 2,332 ft; T.D., 2,585 ft; 6-in. froze; S.D.

W. E. Halbert et al's No. 1 Hunt, C SE Sec. 124, Blk. 64, H. & T. C. Sur. — Drlg., 1,960 ft.
Humble O. & R. Co.'s No. 1 Mattie Jacobs — Drlg., 2,050 ft.
Midwest Explts. Co.'s No. 1 Dora Smith, Jose Gabo. Sur. — Fight. cave, 2,245 ft.
Midwest Explts. Co.'s No. 1 Toombes, Alex Thompson Sur. No. 37 — S.D., 1,780 ft.
Mitchell & Breene's No. 1 Tittle — Location.
Morrison & Thompson's No. 1 Mrs. Alice Rose, SW cor. NE Sec. 29, Blk. 19, T. & P. Sur.; elev. 1,925 ft. — S.D., 2,385 ft.
Owen & Sloan's No. 1 Lattimer — S.D., 725 ft.
Roeser & Pendleton's No. 1 Sam Hutman, C W half NW Sec. 64, Blk. 5, T. & P. Sur. — S.D. for fuel, 710 ft.
Sanger O. & R. Co.'s No. 1 Ike Brown NE cor. Sec. 54, Blind Asylum Land — S.D., 1,900 ft. tools in hole.
Sanger O. & R. Co.'s No. 1 Gillespie, Sec. 7, Lunatic Asylum Land — Drlg., 4,145 ft.
World Oil Co.'s No. 1 J. R. Griffith SW cor. NE Sec. 32, Blind Asylum Land; elev. 1,747 ft. — Drlg., 1,300 ft.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. R. R. Sur. — S.D., 1,235 ft.

TOM GREEN COUNTY

Fitzgerald et al's No. 1 Bennett — Rig.
Marland Oil Co.'s No. 1 Liano, 3,500 ft. S and 13,000 ft. W of NE cor. Liano Co. Sch. Ld. No. 964 — Repair engine, 2,280 ft.

UPTON COUNTY

Beaty et al's No. 1 J. F. Lane — Top salt 880 ft; sulphur water 2,370 ft; show oil 2,250-65 ft; drlg., 2,660 ft.

W. W. Donnelly et al's No. 1 University, C SW Sec. 21, Blk. 4, University — Top salt, 1,560 ft; drlg. by tools 3,165 ft.

Hults et al's No. 1 Giddings, C Sub. Sec. 12, Throckmorton Co. Sch. Lnd. — Top salt 1,515 ft; S.D., 3,165 ft. for pipe.

Marland Oil Co.'s No. 3 Burleson, T. C. Jones Sur. No. 100 — First pay 2,205 ft; sec. pay 2,295 ft; 2,000 ft. sulphur water 3,390-95 ft; 1,000 ft. sulphur water, 4,135 ft; drlg., 4,384 ft.

Marland Oil Co.'s No. 34 Burleson, Sec. 100, T. C. Jones Sur. — S.D., 3,255 ft.
Marland Oil Co.'s No. 3 Benton Land, Julia Prater Sur. No. 1 — S.D., 515 ft.
Sartain & Davis' No. 1 Bull, SW NE Sec. 48, Blk. 41, T. & P. Sur. — Rig burned 3,290 ft; rebuilt.
Simms Oil Co.'s No. 1 B. C. Clark, NE cor. SW, Sec. 5, G. C. & S. F. Sur.; elev. 2,473 ft. — Top salt, 470 ft; S.D., 975 ft; may skid rig.
The Texas Company's No. 19 King, Sec. 11 — Swabbed 70 bbls. oil and 140 bbls. sulphur water, 2,178 ft; hole full sulphur water, 2,465-75 ft. and 2,530 ft; show gas, 2,635 ft; more sulphur water, 2,654 ft; T.D., 2,895 ft; U.R.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore est., Sec. 183, J. Mitchell Sur. — S.D., 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. — S.D., 2,700 ft.
Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 82, Blk. A, I. & G. N. Sur. — Drlg., 2,670 ft.
East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 183, Del Rio Town Sur. — S.D., 3,142 ft; rebuilding rig.
Hiawatha Oil Co.'s No. 1 Sellars, C Sec. 1,031, Blk. A, I. & G. N. Sur. — Hole full salt water, 2,455 ft; fish. cas., 2,585 ft.

Magnolia Pet. Co.'s No. 1 Whitehead, Sec. 81, Blk. D, G. C. & S. F. Sur. — Spudding, 100 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. — S.D., 3,900 ft.
O. O. Owens' No. 1 Mills — S.D., 2,040 ft.
The Texas Company's No. 1 J. M. Perry, NW cor. Sec. 3, G. C. & S. F. Sur. — Rig.

WARD COUNTY

Marland Oil Co.'s No. 1 J. Sealey, C SE Sec. 78, Blk. A, G. M. M. & A. Sur.; elev. 2,820 ft. — Hole full fresh water 970-80 ft; top salt, 1,100 ft; drlg., 3,055 ft; gray lime.

WINKLER COUNTY

Champlin Drlg. Co.'s No. 1 C. W. Cowden, C SW Sec. 21, Blk. C-23, Pub. Sch. Ld., elev. 2,889 ft. — Drlg., 1,820 ft; 3 bailers water.
Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 36, Blk. 27 — T.D., 318 ft; run. 12-in; S.D.
Humble O. & R. Co.'s No. 1 T. G. Hendricks, S and W NE cor. W half NE Sec. 33, Blk. B-5, Pub. Sch. Ld. — Rig.
Independent O. & G. Co.'s No. 1 Hendricks, Sec. 42, Blk. B-5, Pub. Sch. Ld. — Top lime 2,720 ft; first gas 2,787 ft., 3,000,000 ft. at 2,815 ft; started spraying oil 2,824 ft; 700 bbl. oil in hole, 2,877-83 ft.

Independent O. & G. Co.'s No. 1 Hendricks-A — Rigging up.
Liano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Pub. Sch. Ld., elev. 2,921 ft. — Top salt 1,115 ft; hole full water, 1,321 ft; 10-in. set 1,570 ft; run 8-in. 2,671 ft., smell of oil.

McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. B-12, Pub. Sch. Ld. — Set 10-in., 1,420 ft; T.D., 1,825 ft. trying to lower 8-in.

L. D. Ladd, Hill et al's No. 1 Amburgey, C NW Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur., elev. 3,033 ft. — Top salt 1,220 ft; top lime 3,365 ft; T.D., 3,447 ft; rig burned.

R. S. Matthews et al's No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur., elev. 3,120 ft. — Second hole 200 ft; S.D.
Pure Oil Co.'s No. 1 Hendricks, SW cor. Sec. 41, Blk. B-5, Pub. Sch. Ld. — Drlg., 930 ft.
Skelly Oil Co.'s No. 1 M. M. Leeman, 1,320 ft. east of SW cor. Sec. 21, Blk. 75, elev. 2,951 ft. — Top salt, 1,167 ft; drlg., 3,715 ft; anhydrite.

Southern Crude Oil Pur. Co.'s No. 1-C (was No. 2) Hendricks, NE cor. Sec. 33, Blk. B-5, Pub. Sch. — Top salt 1,910 ft; top pay 2,915 ft; started flowing at 2,924 ft; flowed 1,104 bbls. April 13; 917 bbls. April 14; 777 bbls. April 15; gravity 28.8° at 64; T.D., 2,988 ft; aver. 751 bbls. last wk.

Southern Crude Oil Pur. Co.'s No. 2-C (was No. 3) Hendricks, Sec. 33, Blk. B-5 — Top salt 1,901 ft; standardizing 2,563 ft.

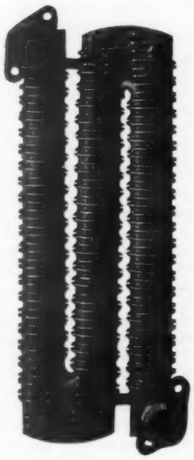
Southern Crude Oil Pur. Co.'s No. 3-C Hendricks, SE cor. NE Sec. 33, Blk. B-5 — Top salt 1,870 ft; drlg., 2,215 ft.
Southern Crude Oil Pur. Co.'s No. 1 Hendricks-B, SE cor. NE Sec. 44, Blk. 26 — Drlg., 1,500 ft.
Texon O. & L. Co.'s No. 1 Central State Bank SW cor. W half SE Sec. 41, Blk. B-5 — Rigging up.
White Eagle O. & R. Co.'s (was Gibson & Johnson's) No. 1 R. A. Lock, 1,320 ft. west of NE cor. Sec. 30, Blk. 74, northwest of discovery well — Spudding.

STERLING

STERLING OIL SECTIONS

For manifold use - for continuous use - for cooling

Have Demonstrated Their Worth in the Amarillo Field



14 Square Foot
STERLING OIL Section

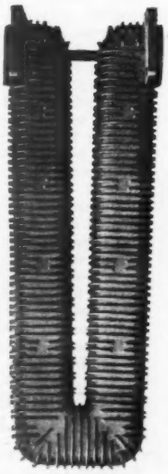
Realizing that the corrosive action of certain oils will attack metals unless special mixes are made to counteract the corrosive elements in the oil, we have run tests on special mixes with the result that *under the same operating conditions—using the same crude* —the Amarillo Refining Company, Amarillo, Texas, has proved that the life of the *NEW* STERLING OIL SECTIONS has increased 50% to date and the Sections are still intact, giving promise of more months of efficient service.

We are constantly improving our product and finding new applications for STERLING OIL SECTIONS and ACCESSORIES in refineries.

STERLING OIL SECTIONS and ACCESSORIES are used in—

Condenser Boxes
Towers
Heat Exchangers
Gasoline Plants
Pre-Heaters

We shall appreciate the opportunity of presenting the possibilities of these Sections to you.



19½ Square Foot
STERLING OIL Section

AMERICAN RADIATOR COMPANY

Manufacturers of IDEAL Boilers for Oil Burning

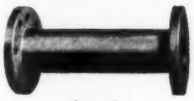
40 W. 40th St., New York 816 S. Michigan Ave., Chicago

STERLING OIL Sections are immediately available at our plants in Kansas City, Mo., and Springfield, Ohio

Companion Flanges

Extension Piece

Header



Spool

Return Bend

Elbow

Flanged Tee

Ferrule

These STERLING Accessories provide special cast-iron construction throughout.

VARIED PROGRAM AT THE N. P. A. MEETING

(Continued from Page 33)

attorney of the association, who turned the session into a conference. He told of the general petroleum rate investigation by the Interstate Commerce Commission with 10 hearings. These hearings had brought out differences in the oil industry. The eastern interests can not agree with the western on shipments from the West into eastern territory, the eastern refiners saying lower rates would result in chaos in the Pennsylvania refining territory, where the refiners must meet the competition from the West on gasoline and also from the Atlantic Seaboard where cheaper crude is used In these hearings the association had sought to prevent increase in eastern territory, to secure reductions in eastern trunk line territory and to secure reductions generally within the territorial divisions. The association had suggested a scale of rates which would range from 2 to 4 cents reduction on the smaller length hauls with smaller reductions for the longer hauls. Mr. Crane said that one hearing still remains—at French Lick, Ind., on June 6.

Another matter discussed at length by the traffic men was tank car taxes in the various states. The Fellowship supper on Thursday night was the leading social event. The entertainment was in charge of Fred G. Clark of Cleveland, who had arranged an interesting program.

Registration

Among those who attended the National Petroleum Association convention at Cambridge Springs Thursday and Friday were: Carl Peterson, Allegheny Seaboard Oil Corp., Warren; H. W. Schmidt, United Refining Co, Warren; W. A. McCafferty, Emery Manufacturing Co., Bradford; C. J. Steigerwald, Wall & Steigerwald, Cleveland; F. J. McCoy, Viking Oil Corp., Clarendon; A. W. Scott, Empire Oil Works, Inc., Cleveland, Ohio; C. L. Suhr, Pennzoil Co., Oil City; M. A. Herald, United Car & Equipment Co., Pittsburgh; Earl A. Barror, Paragon Refining Co., Toledo, Ohio; George T. Yost, Pure Oil Co., Chicago, Ill ; Curtis Balding, Pure Oil Co., Warren; Walter J. Curley, Conley Tank Car Co., Pittsburgh.

H. E. Newell, National Board of Fire Underwriters; Walter H. Seltzer, Tri-State Refining Co., Kenova, W. Va.; Houston Dunn, National Petroleum Mutual Fire Insurance Co., Philadelphia; P. S. Tarbox, Independent Refining Co., Oil City; H. M. Carruth, Canfield Oil Co., Cleveland, Ohio; Charles McLean, Canfield Oil Co, Cleveland, Ohio; John A. Beck, Pennsylvania Refining Co., Karns City; A. B. Weingard, American Oil Works, Titusville; M. E. Kofford, Pennsylvania Refining Co., Karns City; G. C. Davison, Tri-State Refining Co., Kenova, W. Va.; R. L. Peterson and P. V. Ruhlman, Tidioute Refining Co., Tidioute; L. C. Jamieson, Viking Oil Corp., Clarendon; Thomas J. Hilliard, Waverly Oil Works, Pittsburgh; H. C. Dickinson, Bureau of Standards, Washington, D. C.; J. B. Northrop, Ohio Valley Refining Co., St. Marys, W. Va.; Russell R. Buckham, Independent Refining Co., Oil City.

S. B. Browne and R. G. Browne, Great Western Oil Co., Cleveland; B. W. Browne, Great Western Oil Co., Cleveland, Ohio; C. L. Moon, American Fomon Corp.; E. D. Ries, Penn State College, State College; K. C. Northrop, Independent Refining Co., Oil City; Myron Evans, Island Petroleum Co., Baltimore, Md.; Victor I. Downey, National Refining Co., Cleveland, Ohio; L. L. Long, Waverly Oil Works, Pittsburgh; E. M. Craig, Freedom Oil Works, Freedom; I. H. Shearer, Kendall Refining Co., Bradford; Percy L. Craig, Freedom Oil Works, Freedom; Otto Koch, Kendall Refining Co., Bradford; James H. Herbert, Conewango Refining Co., Warren; W. C. Platt, National Petroleum News, Cleveland, Ohio; B. B. Stroud, Bradford; Fayette B. Dow, National Petroleum Association, Washington, D. C.; H. A. Ross, New York; E. W. Smiley, Superior Oil Works, Warren; H. S. Peterson, Seneca Oil Works, Warren; Harry F. Cogswell, Superior Oil Works, Warren; MacLean Houston, United Refining Co., Warren; E. C. Gardner, Seneca Oil Works, Warren; M. F. Cowden, P. O. P. R. Co., Warren; George P. Brockway, Seneca Oil Works, Warren; O. P. Keeney, Tidewater Oil Co., New York; W E. Miller and H. W. Walchli, Tiona Refining Co., Philadelphia; E. F. Hanna, Continental Oil Co., Oil City; Herbert G. Eaton, Mutual Refining Co., Warren.

J. M. O'Day, Sinclair Refining Co., New York; William Schwartz, Warr-Penn Refining Co., Warren; H. H. Greene, Kendall Refining Co., Bradford; Frank Phillippbar, Kendall Refining Co., Bradford; Alfred Mullbaupt, Kendall Refining Co., Bradford; E. M. Lyons, Tiona Refining Co., Warren; D G. Brandt, H. L. Doherty & Co., New York; H. S. Bell, New York; E. H. Condon, Fred G. Clark Co., Cleveland; Paul Truesdell, National Petroleum News, Cleveland, Ohio; George Turnbull, Derrick and The Oil and Gas Journal, Oil City; M. R. Walton and H. E. Widdell, Widdell Engineering Co.; Alex Lackman, Emery Manufacturing Co., Bradford; Willis Crane, National Petroleum Association, Washington, D. C.; N. A. Davis, Mid-Penn Refining Co., Oil City; George E. Read, Calumet Refining Co.; J. H. Overpeck, Ross Heater & Manufacturing Co.; P. C. Girard, Marland Refining Co., Ponca City, Okla.; Albert J. Squier, Warren Lubricant Co., Buffalo, N. Y.; L. P. Calkin, Phillips Petroleum Co.

Robert M. McCaslin, Fred G. Clark Co., Cleveland; T. M. Murphy, W. H. Daugherty & Sons Refining Co., Petrolia; R. J. Alexander, Pennsylvania Grade Crude Oil Association, Oil City; S. Messer, James B. Berry's Sons Co., Oil City; J. P. Flynn, Ohio Valley Refining Co, St. Marys, W. Va.; Harry H. Fuller, Sinclair Refining Co., New York; C. E. Kinder, Crew Levick Co., Titusville; G. B. Hunter, Emlenton Refining Co., Emlenton; A. H. Irelan and W. V. Greer, Crew Levick Co., Titusville; Harry R. Lewis, Conewango Refining Co., Warren; S. P. Worthington, Tiona Petroleum Co., Warren; Fred G. Clark, Fred G. Clark Co, Cleveland; Frank Berry, James B. Berry's Sons Co., Oil City; Jack Fawcett, Crystal Oil Works, Oil City.

Frank Paff, Independent Refining Co., Oil City; J. B. Fisher, Kendall Refining Co., Bradford; Richard A. Watowitch, Empire Refineries, New York; Thomas A. Anderton and W. J. Anderton, Continental Refining Co., Oil City; D. W. Grant, Franklin Refining Co., Franklin; A. L. Confer, Empire Oil Works, Inc., Oil City; E. E. Harrington, National Refining Co., Cleveland, Ohio; W. A. Hamel, Cities Service Refining Co., Boston; J. T. Mullaney, Canfield Oil Co., Warren; R. W. Helm, Canfield Oil Co, Cleveland; George L. Rehm, L. Sonneborn Sons Co., Inc., New York; H. M. Locke, Ohio Valley Refining Co., St. Marys, W. Va.; James F. Brenil, Joseph M. Patterson & Co.; Joseph M. Patterson, Joseph M. Patterson & Co.; Chester Allen, West Penn Oil Co., Warren; Gustav Egloff, Universal Oil Products Co., Chicago; G. G. Brockway, Warren; F. von Tacky and C. L. von Tacky, Titusville Oil Works, Titusville; Wallace Jewell, Superior Oil Works, Warren; Henry Suhr, W. S. Zehrung, D. J. Cavanaugh, R. A. Browne, Pennzoil Co., Oil City; Fred C. Eaton and F. C. Eaton, Jr., Valvoline, Warren; R. G. Phelps, Richard B. Kahle, Beacon Oil Co, Boston; H. R. Defler, Buffalo; R. B. Browne, Great Western Oil Co., Cleveland; J. T. Brosnahan, Emlenton Refining Co., Emlenton; C. R. Kerr, Penn Maid Oil Co., Bradford; Harry Barnard, Chicago; H. W. Pearsol, Warren; D. J. Harvey, Pennzoil Co., Oil City; W. E. Wall, Cleveland; Roy Willis, Cleveland; Rex Babbitt, Oil Jobbers Corp., Buffalo; Thomas E. McLaughlin, Independent Refining Co., Oil City; C. E. Basington, United Refining Co., Warren; M. H. Hindman, American Oil Works, Titusville; L. R. Cavanaugh, Empire Oil Works, Oil City; C. S. Nolf, Continental Refining Co., Oil City; Ralph P. Byles, Oil City.

WATER CONSERVATION AND HEAT EXCHANGE

(Continued from Page 32)

"cut and try" methods, but this condition is being steadily remedied and the very crude methods of heat recovery are rapidly being replaced by more efficient apparatus which has proven so successful in those refineries that have realized the importance of heat conservation.

In this day of keen competition, of price cutting and of demoralized markets, it is of tremendous importance to the refiner that he give the matter of conservation his closest scrutiny and application. I reiterate my earlier statement that nowhere does heat exchange equipment lend itself so admirably to substantial economies as in an oil refinery. Do not misunderstand me! In the distillation of petroleum there are other pieces of equipment which are just as much heat exchangers as a liquid to liquid heat exchanger or a vapor to liquid heat exchanger. For instance, the old shell still or the modern pipe still are both heat exchangers from the gases of combustion to oil through the shell of the still or the pipes in the pipe still. However, as proven recently by one of the member companies, it may amount to the difference between 34 pounds of coal to the barrel of oil charged to the old batch still as compared with 12 pounds of coal to the barrel of oil run through a modern pipe still, not to say anything about the improvement in the quality of the finished oil. As certainly as I stand before you today, this huge and intricate industrial battle in which we are engaged must eventually gravitate to the end of the survival of the fittest. No one concern has a monopoly on all the best brains. Conditions within the industry today are but a clarion call to those who have vision and will act.

More practical progress has been made in heat conservation during the past quarter century than any other branch of power economies. Most of this work has been directly due to the efforts of engineers in power plants and oil refineries. Perhaps our good friend, Mr. Ross, the capable power plant engineer who preceded the speaker, may question giving a great deal of credit to refinery engineers. Many power plant men consider that refinery practice still lacks "refinement" in the matter of heat conservation and point to practices in refinery work which they would consider criminal waste.

It is perhaps true that fewer heat units are wasted in power plant work than in refinery practice. But this is largely due to the multitudinous difficulties faced by the refinery engineer.

The power plant man knows the constants of steam exactly. His use of steam is bounded by narrow limits. The refinery engineer has wider and more inexact uses for heat, and to this difficulty is added his dealing with vapors of varying latent heats under conditions which are constantly changing.

Even under these conditions, the best refinery practice is closely approaching powerhouse efficiency in the matter of possible heat conservation. Refineries are today operating on a small fraction of the fuel once used in the older wasteful processes. The rapid strides of the past few months in refinery heat conservation augurs fair to make the next two or three years tremendously important in heat exchange development.

Those of you who were fortunate enough to take the inspection trip on April 8 through the modern Petty Island plant of the Crew-Levick Co. know what I mean. There, I am told, they have a modern continuous battery of stills with efficient heat exchange equipment and all on a plot of ground many times smaller than that required by a battery of old type batch stills. Also, and here is the most important thing to my mind, the only place water is used on the entire battery was in a small condenser on the gasoline stream. All other overhead cuts are condensed by the use of the incoming charging stock through the proper utilization of heat exchange equipment.

In many of the older refineries it is a pertinent question to ask whether or not it is desirable to add modern heat exchanger equipment to an inefficient still battery or to build an entirely new unit using the modern pipe still as the primary source of heat and with efficient heat exchangers mounted closely together to minimize heat losses and permit the use of automatic control to a large extent. Often the old battery with some minor changes and additions can be revamped with comparatively small expense to secure the desired results.

In a treatise of this kind it is obviously impractical to cite actual examples of economies effected through the utilization of heat exchange equipment unless every condition is given. The work that an exchanger is required to perform is directly related to the type of charging stock, fractionation, type and number of stills, liquid surface, bottoms and other variables which makes it readily apparent that before possible economies can be determined a careful survey must be made. In many instances, too, there is a question of gums, sediment or residue adhering to the tubes, which necessarily involves the provision for cleaning facilities if efficiencies of rating are to be maintained.

Refinery engineers are agreed upon there being no real reason why exchanger equipment should not get at least 60 to 70 per cent of the heat from the vapors and residual in petroleum distillation. Ordinarily, the average exchanger is most economical when recovering 80 per cent of the available heat. Its capacity is almost directly increased with an increase in the velocity of the fluid. However, the pumping cost increases much faster than the increase made possible in the velocity of the fluid. Hence, the reason for the economic range centering around the 80 per cent point.

It is important to keep in mind that the steam used in distillation gives up approximately 950 B.t.u.s per pound when condensed, whereas oil vapors give up around 125 B.t.u.'s. It logically follows that only enough steam would be used in the distillation to secure the results desired. Many of the larger plants have recently capitalized on this fact, coupled with the fact that oil vapors condense at a higher temperature than steam vapors, by placing steam jet thermo compressors on stills using quantities of steam. This arrangement may be briefly described as follows:

The mixture of steam and oil vapors leaving the still, flows to the condenser where water is used as the condensing medium. The oil vapors condensing first at the higher temperatures permit the steam being withdrawn and supplemented with sufficient live steam to boost the pressure and return to the still. A double saving is thus effected, first there is a substantial saving in live steam used, thereby improving the overall economy of the still, and, second, the reduction in the condenser duty results in a material reduction in the quantity of cooling water required.

ERECTING BIG TANKS IN GULF COAST MARSH

HOUSTON, Tex., May 2.—The Gulf Refining Co. is erecting 18 steel tanks of 80,000 bbls. capacity each in the marshes of the company's refinery at Port Arthur. The tanks are being built on piling from 50 to 80 feet long which is driven into the ground on top of which is poured a solid foundation of concrete. The tanks are being erected by Reeves Brothers of Alliance, Ohio.

NEW VENEZUELAN WELLS

Venezuelan Oil Concessions, Ltd., announces the bringing in of two wells, No. 141 in La Rosa Field, producing 786 bbls. in eight hours, or at a rate of 2,352 bbls. a day, and P-28 in the La Paz Field, flowing 2,741 bbls. daily.

How much money does corrosion cost you every year?

The loss, the waste, caused by corrosion is really appalling. It mounts up to astounding figures, for besides the installation and replacement costs, the fact that corrosion shortens the life of apparatus, slows up operations, and cuts down production, seriously reduces the profits.

The apparatus in oil refineries is not only subjected to the ordinary ravages of chemical action, but is specially subjected to attack by corrosion because of sulphur and its compounds, and the salt water with its magnesium chloride, which are present in all crude petroleums.

That is why interest in the subject of the waste due to corrosion is now so widespread—and the value of ATERITE as the means of resisting corrosion is daily becoming more generally recognized.

ATERITE is a patented, non-corrosive, acid-resisting, metallic alloy, and through its use in ATERITE Valves and Fittings it has been fighting corrosion for years in many industries.

You will be interested in knowing the results of different tests which show the strength, ductility, torsion, density, and other qualities of ATERITE, and what they mean to you in the solution of your acid-resisting problems.

They are contained in the ATERITE booklet which will be gladly sent to you upon request. Write us for a copy of it—and if you will tell us of your own particular problems we will co-operate with you to solve them to the best advantage.

Standard Aterite Gate Valve—Screwed Bonnet—Screwed Ends

Aterite Extra-Heavy Cock—Screwed Two-Way Plug

Standard Aterite Gate Valve—Bolted Bonnet—Screwed or Flanged Ends.

The Barber Asphalt Company
Iroquois Department
PHILADELPHIA
New York Chicago Pittsburgh St. Louis Kansas City San Francisco

Cast Aterite is recommended for these chemicals

Acids:
- Arsenious
- Boric
- Carbolic
- Citric
- Fatty
- Formic
- Hydrofluoric
- Hydrofluosilic
- Lactic
- Oelic
- Pyrogallic
- Salicylic
- Sulphurous
- Tannic
- Tartaric

Sulphuric—Cold—of any degree Baume, including Fuming.

Sulphuric—Hot—up to 60° Baume, any temperature up to 150° F.

Sulphuric—Hot—60° to 66° Baume, any temperature up to 225° F.

Bases:
- Calcium Hydrate
- Caustic Soda
- Caustic Potash

Salts:
- Aluminum Chloride
- Ammonium Bromide
- Ammonium Carbonate
- Ammonium Citrate
- Ammonium Oxalate
- Ammonium Phosphate
- Ammonium Sulphate
- Barium Chloride
- Barium Sulphate
- Calcium Chloride
- Calcium Citrate
- Calcium Sulphate
- Copper Sulphate
- Lead Acetate
- Nickel Sulphate
- Sodium Citrate
- Sodium Hypochloride
- Sodium Formate
- Sodium Phosphate
- Sodium Sulphate

Organic Compounds:
- Acetone
- Benzol
- Carbon Tetrachloride
- Chloroform
- Collodion
- Ethyl Alcohol
- Ether
- Formaldehyde
- Glycerine
- Methyl Alcohol
- Phenol

Mixtures.
- Mine Water
- Tannic and Sulphuric Acids

Colors:
Nearly all colors and derivatives made from coal tar products and many others.

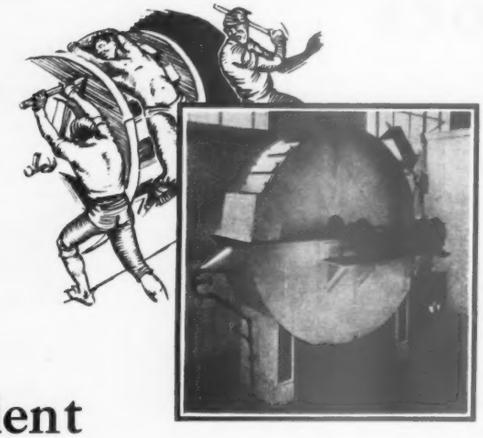
Standard Aterite Gate Valves—screwed bonnet, screwed ends—are furnished in the following sizes: ¾", 1", 1½".

Standard Aterite Gate Valves—bolted bonnet, screwed or flanged ends—are furnished in the following sizes: 2", 3", 4", 6", 8".

Aterite Extra-Heavy Cocks, particularly adapted for lines carrying Sulphuric Acid, are constructed entirely of Cast Aterite, in sizes: ½", ¾", 1", 1½", 2", 3".

ATERITE
TRADE MARK REG. U.S. PAT. OFF.

Non-Corrosive Acid-Resisting
Valves & Fittings
for Oil Refineries and General Chemical Purposes



Ancient torture "wheel" applied to paint industry

Lasting Qualities of Hill, Hubbell Paints Insured By Paint-Punishing Wheel Test

Borrowing the principle of the ancient torture wheel Hill, Hubbell & Company have developed, in their laboratories, a machine that tests paints by subjecting them to an unusual amount of punishment.

Thirty-one samples of paint are prepared and placed around the rim of the test wheel. It turns very slowly—about two revolutions per hour. The samples are first subjected to extreme heat, then plunged into freezing cold water. Next the panels receive a spray of warm water and then their dripping surfaces are exposed to intense ultra-violet rays.

This gruelling test is repeated for one thousand hours—considered equivalent to four years exposure to the elements. Only the fit survive. Such paints are worthy of protecting your property.

HILL, HUBBELL & COMPANY

Manufacturers of

Highest Grade Oil Industry Paints and Pipe Line Coatings

Factories at SAN FRANCISCO and TULSA

District Offices

331 W. Eleventh St. LOS ANGELES
2412 First Ave. S. SEATTLE
1006 Washington Ave. HOUSTON
51 First St. PORTLAND
15 Moore St. NEW YORK CITY
600 E. Lombard St. BALTIMORE

IMPROVING THE USE OF AIR-GAS LIFT

(Continued from Page 80)

maintenance cost. The mobility, however, of this light type of equipment, necessarily speaks strongly in its favor. Always the element of time is of absolutely primary importance in the recovery of flush oil from new wells. The matter of a difference of a very few days in the production of large wells can account for expense to any measure, almost without limit, which may be applied as effectively as is the case in the method of successful air lift.

Many Facts to Consider

In view of the newness of the method in the minds of many operators, it will necessarily run the gamut of all the speculation attending, out of which much interesting comment is to arise. It should rest reasonably settled that the method can do no hurt to the normal oil reservoir; that it extends the flush life of production; that it sustains wholly or partially the initial resident pressure of gas in the rock, et cetera. But the matters about which the individual will be concerned run to other details of consideration, and going beyond the data of the mechanical technology involved, there arises for very interesting and serious consideration the other data in which the operation of the individual lease has to assume its own consequences. It would appear for the moment that stratigraphy and the condition of the structure with reference to varying porosity, position of the water lines and position of individual leases in the structure gradient are of vital importance, as related to individual divisions or leases of operation. It is probable that the data which may govern the disposition of these matters will be a long time wanting. In fact, with reference to porosity, it would seem at present improbable that any leaseowner may be able to determine to his own satisfaction what his own lease condition may be, or ever to know definitely whether the application of one flow pressure all over the pool area may be fair and impartial to himself or with regard to this particular incident. As to the lines of water encroachment on an edge lease in a pool, it may or may not be possible to develop data of experience which is useful to the operator for his surmises. As a matter of rough and ready conclusions, it would appear that the application of maximum pressure in his own case for the flowing of his own wells might tend to retard the encroachment and serve to such an edge-leaseowner a reasonable share of protection. So far as this writer's present information goes, the matter of stratigraphic position with regard to gradient or drainage in the sands is one very important, and should be known as thoroughly as possible to each leaseowner. Naturally one jumps to the conclusion that in the general application of pressure-flow methods to a pool, the lease resting on the dome would have to use extreme care as the life of operation is developed, and particularly would this be true in case the pitch of the structure is steep, and where the drainage would naturally be away from the crest. The applicant of pressure to flow the wells in the crest, it would appear, might suffer seriously if he became too aggressive in his extent, both in volume and pressure, of activity. Out of regard for this latter phase of operation no doubt the largest consideration has arisen in the minds of experts looking to the consolidation of pressure application. Even so, the leases on the upgrade portion of the strata might have to have scientific consideration with reference to application of some differential of pressure in their favor.

JAPANESE OIL MEN TO AMERICA

H. Horie and N. Iitaka of the Nippon Oil Co., Ltd., are on a visit to the United States to make themselves fully acquainted with the different phases of the oil industry and the latest developments of oil refining.

PETROLEUM PROSPECTS IN PARTS OF CHINA

From the point of view of petroleum occurrences and prospects, Asia, our greatest continent, is to a large extent unknown territory.

Apart from southern Persia, India (including Burma) and Japan, where the petroleum occurrences have been developed, very little can be said for the remainder of Asia. By far the larger portion of the continent remains practically unprospected for petroleum, due largely to difficult natural conditions and poor communications, but also, in some instances, due to political conditions which offer little inducement to oil seekers to risk effort and capital in the search.

The Baku oil fields are mainly in Europe, but at least a portion of the oil-yielding territory belongs to Asia. Oil undoubtedly exists in various places in Russian Turkestan, east of the Caspian Sea. There seems no doubt also about the existence of commercial quantities of oil in Mesopotamia. But what of the great stretch of territory in Siberia east of the Urals and lying between that mountain range and the eastern coast bounded by the Sea of Okhotsk, the Behring Sea and the Sea of Japan, and the vast territory of China which lies to the south of Siberia? At present, knowledge of the petroleum possibilities of these immense areas is exceedingly small. The known existence of petroleum in Russian Turkestan and the fact that the same geological conditions extend into Chinese Turkestan is regarded as a good reason for believing that petroleum will be found in commercial quantities in this part of Chinese territory. But this region has so far been only very imperfectly explored. Its connection with the rest of the world is extremely slight. But petroleum indications are definitely reported to exist at the foot of the Tchiang-Chang Mountains in the northeastern part of Chinese Turkestan, which, it is stated, would be considered very important if more favorably situated for access and development.

Among other important petroleum indications scattered over China, mention may be made of those at Yang-Tse-Kiang in the south, in the center of the present disturbed part of China. Other indications regarded as important are found in Yunnan, in the range of the railway which runs into the French sphere of Tonkin. This locality is quite accessible.

Petroleum occurs at Fou-Kien in Kan-Su Province, where it is exploited in a primitive way by the local inhabitants.

In East Central Szecheun, west of Tze-liu-ching, about 100 miles west of Chungking and south of Chintu, is the most important oil-producing locality in China; and about 18 miles to the south of Tze-liu-ching there is a large oil seepage and many gas escapes from crevices in the rocks. In the oil areas of this province, a number of shallow wells have been drilled or dug, and the oil is recovered from the latter by means of a bucket and windlass. In other cases, open excavations have been made into which the oil seeps and is collected. The annual production is not known with any degree of accuracy, but one estimate puts it at about 30,000 bbls. Oil has been obtained in this primitive way for generations without any sign of exhaustion, which seems to indicate the presence of a large accumulation.

The greatest hopes for commercial occurrences of petroleum are centered in the northern provinces of the country. In this part of China, there is an immense area of sediments, including shales, sandstones and other sediments of Tertiary age, in which the conditions for petroleum accumulation are considered to be highly favorable. But before the possibilities of these areas can be systematically explored, settled conditions are necessary.

The Japanese have for some time past been interested in the possibilities of obtaining Manchurian oil for the use of their navy. According to reports, they have considered the exploitation of the oil-shale found in association with the coal seams on the Fushun coal field. A recent report, however, speaks of the dis-

covery of well petroleum in the province, which is probably the result of Japanese effort.

The above information, taken mainly from Le Courrier des Petroles, and its vague character indicates how little is known of petroleum possibilities in China, and indeed many other parts of the Far East.

China is rich in economic mineral deposits generally, and an appreciable export of certain of these—antimony, tungsten, tin and some others—occurs. In the past few years a Chinese Geological Survey Department has been organized. The personnel of this department has been trained mostly in the United States, and this includes some very competent geologists. The department, as at present organized and financed, is absurdly inadequate for the immense task of studying the geological conditions of China, but in time will doubtless add greatly to the world's knowledge of these conditions and may yield some surprises for the petroleum industry.

USE SUBSTITUTE FUELS IN AUTOMOBILE TESTS

"Gazogene" vehicles, or those that generate their own motive fuel from charcoal, wood or other substitutes for gasoline, were successfully demonstrated during a recent three weeks' tour of France by 30 automobiles, the trade commissioner at Paris, H. H. Kelly, has informed the Department of Commerce. His report follows:

The interest which is being displayed in France in the search for an efficient substitute for gasoline as a motor fuel has been stimulated by a three-week tour of 30 automobiles using numerous fuels other than gasoline. The automobiles covered 1,850 miles during the course of the experimental trip and all of those that started succeeded in finishing on the substitute fuel.

The long tour (called officially the "Rally of International Carburants") started from Paris and followed an itinerary which touched Clermont-Ferrand, Lyons, Marseilles, Toulouse, Bordeaux and Tours, and ended at Versailles. The length of the daily runs varied from 75 to 150 miles, but the machines were not on operation every day.

One of the results of the tour, according to reports in France, was the successful demonstration of "gazogene" vehicles, which generate their own motive fuel from charcoal, wood or other substitutes. Most French observers regard this vehicle as the most promising of those designed to operate on fuel other than gasoline. In the tests just ended, 14 of these "gazogene" vehicles participated, all of which carried heavy loads throughout the tour.

In the French attempts to find substitutes for gasoline the greatest technical progress has, it is stated, been made in the "gazogene" or producer gas plants, and their application not only to trucks but to light vehicles. During the recent tour a truck operated by this method equipped with pneumatic tires and scaling more than 11 tons, covered 150 miles in a day. The official Panhard & Levassor truck, weighing more than 8 tons, easily reached a speed of 35 miles per hour.

Of the 14 producer-gas vehicles, 8 used Carbonite, a special type of compressed charcoal made up into balls somewhat smaller than an egg, and having the advantages of greater cleanliness, ease of handling and greater density and purity. The Berliet trucks, it is said, used small wood chips or blocks only. One Delahaye ran on ordinary charcoal, and a small touring car which set out with granulated peat charcoal completed the run on wood charcoal bought at bakers' shops along the road when its original supply was exhausted.

The gazogene vehicles are equipped with a generator, a sort of furnace mounted usually beside the driver's seat and weighing in the neighborhood of 1,000 pounds in the large truck size. They are filled with the necessary fuel, and are consumed slowly by means of a fire started in the base of the generator, thus producing a gas which is fed into the engine through a special carburetor. One filling of the generator is good for a run of 100 to 125 miles, and since little ash remains, the generator hardly needs to be cleaned out more frequently than once every week or two.

Another type of vehicle which is reported to have showed great promise in the tests was that employing compressed gas. Four machines of this type took part in the tour, making use of compressed methane gas having 900 calories per cubic meter, this being the essential part of coal illuminating gas and also a by-product in the production of synthetic ammonia. The cost of this gas is equivalent of 1 franc per liter, which is regarded as very advantageous. It is compressed in metal bottles of a new light type.

GERMAN PLANE SELLS FOR LESS THAN $1,000

Germany is developing a light airplane which can be sold for less than $1,000, according to a report just received at the Department of Commerce from the American Trade Commissioner at Berlin, Theodore Pilger.

The "Espenlaub luftzengau" of Cassel, Germany, recently brought out a small airplane in which the motive power is furnished by a motorcycle engine.

One trial plane is said to have flown 328 miles to Berlin in 3½ hours, using $1.30 worth of gasoline. A Messerschmidt two-seater cycle motorcycle machine is said to have flown 721 miles in 7 hours and 50 minutes and reached a maximum altitude of 14,850 feet.

The company is now specializing on a 35-horsepower machine which should sell at approximately $1,000. This machine is fitted with a three-cycle Anzani motor. It is claimed that it will leave the ground in 70 feet, and attain a height of 1,000 meters in six minutes. The wings have a spread of 34 feet and the machine is about 17 feet long; it has an air resistance area of about 13 square meters.

The manufacturers are hoping to create such a demand for these machines that the price can be reduced so much that they will become a common necessity.

NEW PETROLEUM FILM

The addition of an elaborate motion picture film visualizing "The Story of Petroleum" to the already large library of educational films owned by the United States Bureau of Mines is assured by the appropriation of the American Petroleum Institute of $25,000 to be expended in co-operation with the bureau for the production of a motion picture depicting the various phases of the petroleum industry.

It is planned to illustrate in detail the production, transportation, refining and marketing of petroleum. Representative oil fields in all parts of the United States will be visited in the making of the film. Safety methods and appliances will be given special attention, as the Bureau of Mines is at present engaged in conducting a safety-first campaign in the oil industry. It is planned to begin work upon the picture within the very near future. The making of the film will probably require several months.

TO DIESELIZE SHIPS

Recommendation that the United States Shipping Board Dieselize its ships in the South American trade without delay in order to shorten the time required to make trips to the continent was made to the board by E. C. Plummer, vice chairman.

BUSES AND TRUCKS ABROAD

Motion picture films demonstrating uses to which buses and trucks are put by leading railroads in co-ordinated rail and motor services are being produced by the foreign trade department of the National Automobile Chamber of Commerce for use abroad.

Frank F. Strout, Chief Engineer, Reading Water Works, Reading, Mass.

Made by Old-Time Craftsmen

These American Gauges have been in service since February 1891. 35 years of continuous service would be remarkable for any ordinary gauge, but it is not unusual for American Gauges.

Mr. Strout writes:

"With reference to the gauges shown on the photograph, these were installed in February 1891 and have been in continuous service since that time. They have been tested annually and found correct each time. This is particularly remarkable in view of the fact that the center gauge of the three on the panel feels pulsations from a reciprocating pump.

Respectfully yours,
Frank F. Strout."

American Gauges have been the Standard of Quality for over 75 years. They were built by old-time craftsmen then—they are built by old-time craftsmen now. That's why they last.

Write for Booklet A-5

AMERICAN SCHAEFFER & BUDENBERG CORP.
338 Berry St., Brooklyn, N. Y.

Atlanta	Cleveland	Minneapolis	*San Francisco
*Boston	Detroit	Philadelphia	*Seattle
Buffalo	Houston	*Pittsburgh	St. Louis
*Chicago	*Los Angeles	Salt Lake City	*Tulsa

*Stock carried at these branches.

Direct Factory Representatives for Eastern Canada:
Mechanical Equipment Co., 807 New Birks Building, Montreal.
For Middle Western Canada: Kipp-Kelly, Ltd., 68 Higgins Ave., Winnipeg.

AMERICAN GAUGES

never

an order that *hasn't* brought a *repeat order..*

...an *amazing* record ...but *not surprising*

In all sincerity, have you ever heard of a record like this before? NO-CO-RO DROPS and Seats have now been shipped to every oil country in the world. *Not a single customer has failed to place a repeat order. Every last user has ordered more.*

An amazing experience, but readily understandable when you consider the amazing records that this product is making. Six, twelve, even eighteen months' service in wells that formerly required change every *month.* Not isolated cases, but typical every day records.

The explanation lies in the revolutionary principle that the DROP and Seat introduces. The length of a NO-CO-RO DROP and Seat is practically twice the diameter of the corresponding Ball and Seat. The bearing a ball has in a crown is a spot; in a drop it is a line equaling the full length of the drop. Seating surface of the drop is many times that of the ball. As a result, there is no leakage, no rattle or flutter, less wear on the seat, no pounding out of the crown. Operation unheard of before becomes a regular experience.

We leave it to you as to whether or not such a product is worth a trial.

Only NO-CO-RO Balls and Seats are made of NO-CO-RO Guaranteed to outlast two ordinary Balls and Seats.

NORRIS BROTHERS, Inc.

Robinson, Illinois

Mid-Continent Warehouse: Fort Worth, Texas.

GULF PORT SHIPMENTS DROP 840,158 BARRELS IN MARCH

A total of 17,728,224 bbls. of refinery products and crude went out from the Gulf ports by water during the month of March, representing an increase of 840,158 bbls. over February.

Water shipments of refinery products aggregated 10,637,489 bbls. and of crude 7,090,735 bbls. Compared with February this is an increase of 726,805 bbls. in the amount of refined and an increase of 113,353 bbls. in crude.

The gross exports were 2,428,656 bbls., made up of 2,349,030 bbls. of refinery products and 79,626 bbls. of crude. This is an increase over February of 724,994 bbls. refinery products and of 9,570 bbls. crude.

The following table gives the shipments of each company:

BY THE TEXAS COMPANY FROM PORT ARTHUR

Refined

Coastwise	1,184,197
Export	351,681
Total	1,535,878

No crude shipments.

BY GULF REFINING CO. FROM PORT ARTHUR

Refined

Coastwise	2,312,868
Export	97,167
Total	2,410,035

No crude shipments.

BY MAGNOLIA PETROLEUM CO. FROM BEAUMONT

Refined

Coastwise 1,539,894

445,439 bbls. of the total were manufactured fuel oil. Company makes no distinction between coastwise and export consignments.

Crude

Coastwise 755,003

BY SUN COMPANY FROM SABINE

Crude

Coastwise 606,058

BY PURE OIL CO. FROM SMITH'S BLUFF

Refined

Coastwise 173,301

Crude

Coastwise 808,696

BY HUMBLE OIL & REFINING CO. FROM NECHES TERMINAL (Orange)

Crude

Coastwise 73,983

BY ATLANTIC OIL PRODUCING CO. FROM BEAUMONT

Crude

Coastwise 382,113

BY ATLANTIC OIL PRODUCING CO. FROM ATRECO

Crude

Coastwise 468,553

BY ATLANTIC OIL PRODUCING CO. FROM SMITH'S BLUFF

Crude

Coastwise 78,821

BY HUMBLE OIL & REFINING CO. FROM TEXAS CITY

Crude

Coastwise 1,396,041

BY SWIFTSURE PETROLEUM CO. FROM TEXAS CITY

Crude

Coastwise 365,834

BY HUMBLE OIL & REFINING CO. FROM BAYTOWN

Refined

Coastwise	1,656,806
Export	1,064,549
Total	2,721,355

Crude

Coastwise	771,485
Export	25,753
Total	797,238

BY HUMBLE OIL & REFINING CO. FROM INGLESIDE (Corpus Christi)

Crude (Mirando)

Coastwise (to Baytown) 111,138

BY CROWN CENTRAL PET. CO. FROM HOUSTON (Pasadena)

Crude

Coastwise 270,284

BY SINCLAIR OIL REFINING CO. FROM HOUSTON (Sinco)

Refined

Coastwise	366,895
Export	98,203
Total	465,098

Crude

Coastwise 399,350

BY GALENA SIGNAL OIL CO. FROM HOUSTON (Galena)

Refined

Coastwise	40,000
Export	26,000
Total	66,000

BY STANDARD OIL CO. OF LOUISIANA FROM BATON ROUGE

Refined

Coastwise	1,014,498
Export	711,430
Total	1,725,928

Crude

Coastwise	523,750
Export	53,873
Total	577,623

SUMMARY

Water Shipments, Refined and Crude, from Gulf Ports During March, 1927

Company and Port—	Refined	Crude	Total
The Texas Company, Port Arthur	1,535,878	.....	1,535,878
Gulf Refining Co., Port Arthur	2,410,035	.....	2,410,035
Magnolia Petroleum Co., Beaumont	1,539,894	755,003	2,294,897
Sun Oil Co., Sabine	.....	606,058	606,058
Pure Oil, Smith's Bluff	173,301	808,696	981,997
Humble Oil & Refining Co., Neches Terminal	.....	73,983	73,983
Atlantic Oil Producing Co., Beaumont	.....	382,113	382,113
Atlantic Oil Producing Co., Atreco	.....	468,553	468,553
Atlantic Oil Producing Co., Smith's Bluff	.....	78,821	78,821
Humble Oil & Refining Co., Texas City	.....	1,396,041	1,396,041
Swiftsure Petroleum Co., Texas City	.....	365,834	365,834
Humble Oil & Refining Co., Baytown	2,721,355	797,238	3,518,593
Humble Oil & Refining Co., Ingleside	.....	111,138	111,138
Crown Central Petroleum Co., Houston	.....	270,284	270,284
Sinclair Oil Refining Co., Houston	465,098	399,350	864,448
Galena-Signal Oil Co., Houston	66,000	.....	66,000
Standard Oil Co. of Louisiana, Baton Rouge	1,725,928	577,623	2,303,551
Total March	10,637,489	7,090,735	17,728,224
Total February	9,910,684	6,977,382	16,888,066
Difference	726,805	113,353	840,158
Exports			
The Texas Company	351,681	.....	351,681
Gulf Refining Co.	97,167	.....	97,167
Humble Oil & Refining Co.	1,064,549	25,753	1,090,302
Sinclair Oil Refining Co.	98,203	.....	98,203
Galena-Signal Oil Co.	26,000	.....	26,000
Standard Oil Co. of Louisiana	711,430	53,873	765,303
Total March	2,349,030	79,626	2,428,656
Total February	1,624,036	70,056	1,694,092
Difference	724,994	9,570	734,564

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

	Month of March		3 Mos. End. March	
	1926	1927	1926	1927
Petroleum—Crude ..... Bbls.	964,433	1,199,299	3,196,732	3,567,459
Petroleum—Crude ..... $	1,757,967	2,064,120	5,912,064	6,470,528
Total refined petroleum ..... Bbls.	7,755,264	8,560,798	25,286,114	26,930,363
Total refined petroleum ..... $	38,350,403	36,453,261	114,081,706	116,509,326
Gasoline, naphtha and other light products. B. ls.	3,032,242	3,123,214	9,476,571	10,087,625
Gasoline, naphtha and other light products ..... $	19,424,027	17,958,835	59,101,419	60,643,827
Oils—Illuminating ..... Bbls.	1,866,246	1,342,074	5,260,692	4,316,206
Oils—Illuminating ..... $	8,805,041	6,440,684	22,529,179	20,600,950
Oils—Gas and Fuel ..... Bbls.	2,113,980	3,199,135	8,292,267	10,138,180
Oils—Gas and fuel ..... $	2,689,026	3,800,483	10,948,599	13,066,990
Oils—Lubricating ..... Bbls.	729,223	877,522	2,219,534	2,332,622
Oils—Lubricating ..... $	7,288,425	8,030,500	21,069,772	21,559,460
Other refined petroleum products ..... Bbls.	13,574	18,843	37,050	57,330
Other refined petroleum products ..... $	143,884	222,759	432,737	638,099
Paraffin wax ..... Lbs.	25,004,772	28,204,656	82,775,180	81,111,550
Paraffin wax ..... $	1,410,675	1,419,620	4,598,398	4,314,436

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

NORTH CENTRAL AND WEST TEXAS

Archer County

George L. Pace and Nelson Holding Co.'s No. 1 L. F. Wilson, 200 feet north and east of SW. cor. of Lot 3, Section 23, A. T. N. C. L. Survey. Prairie Oil & Gas Co.'s No. 15 L. F. Wilson-E, 160 feet north and west of SE cor. of the N half of Lot 12, Section 27, same survey; No. 18, 680 feet north and 480 feet west of SE cor. of the N half of the same lot and section; No. 19, 150 feet north and 200 feet west of SE cor. of the N half of the same lot and section; No. 20, 635 feet north and 480 feet west of SE cor. of the N half of the same lot and section. C. W. Boller and others' No. 1 R. E. Farmer, 850 feet north and 1,450 feet west of SE cor. of William Baker Survey, A-15, being 200 feet north and 150 feet east of SE cor. of Lot 18.

Brown County

Curry & Moore's No. 5 G. W. Pickett, Jr., 800 feet north and 150 feet east of SW cor. of their 50-acre lease out of Greenberry Logan Survey, No. 147. Empire Gas & Fuel Co.'s No. 1 R. S. Williams, 1,380 feet south and 1,695 feet west of NE cor. of R. S. Williams 770-acre tract out of Stephen Jones Survey, No. 283. Monnelea Oil Co.'s No. 1 George S. Bough, 150 feet north and east of SW cor. of north 80 acres of George S. Bough's 580-acre tract out of J. C. Noel Survey, No. 638. The Texas Company's No. 43 R. M. Lowe, 150 feet north and 1,350 feet east of SW cor. of George Stubblefield Survey, No. 622. Corrected location: Haskell and others' No. 1 T. M. White, 150 feet east of the middle of the west line of T. M. White's 60-acre tract out of Mrs. J. Ude Survey, No. 16.

Callahan County

Branch Brothers' No. 1 Tom Windham, 900 feet north and 450 feet west of SE cor. of Section 2, Block 6, S. P. R. R. Survey. Corrected location: Murchison and others' No. 1 J. C. McDermott, 1,345 feet south and 17,35 feet west of NE cor. of Victoria County School Land, No. 203.

Clay County

A. H. Bevering and others' No. 4 H. Bobby, 150 feet northeast of southwest line and 150 feet southeast of northwest line of northeast 40 acres of northwest 80 acres of Section 46, Bacone Subdivision; No. 5, 150 feet southeast of northwest line and 750 feet northeast of southwest line of northeast 40 acres of northwest 80 acres of the same section.

Coleman County

Corrected location: Ell Evans and others' No. 1 Mrs. R. M. Lowe, 1,330 feet south and 1,920 feet east of NW cor. of Mrs. R. M. Lowe's 450-acre tract out of J. A. Wright Survey, No. 747.

Cooke County

American Refining Co.'s No. 14 J. A. Dennis, 1,200 feet north and 400 feet west of SE cor. of its 80-acre lease out of T. J. Moss Survey, A-736. Oil Operators Trust Co.'s No. 4 M. J. Kleiss, 450 feet south and 150 feet west of NE cor. of Block 60, Town of Muenster. Roxana Petroleum Corp.'s No. 1 A. Walterscheid, 150 feet south and west of NE cor. of A. Walterscheid's 165-acre tract out of J. A. Littleton Survey, A-586. Corrected location: L. Thornton and others' No. 1 O. L. Spence, 150 feet south and east of NW cor. of east 30 acres of O. L. Spence's 85-acre tract out of T. Toby Survey, A-1,050.

Crane County

Simms Oil Co. and Atlantic Oil Producing Co.'s No. 8 University Land, 990 feet north and west of SE cor. of Section 39, Block 30, University Land Survey. Carl Cromwell and others' No. 5 University Land, 330 feet north and 990 feet east of SW cor. of Section 47, Block 30, University Land.

Eastland County

Corrected location: Texas Pacific Coal & Oil Co.'s No. 2 R. W. & J. M. Higginbotham, 200 feet south and 150 feet west of NE cor. of Section 53, Block 4, H. & T. C. Survey.

Howard County

F. H. E. Oil Co.'s No. 1 John Roberts, 1,520 feet south and 1,320 feet west of NE cor. of Section 156, Block 29, W. & N. W. Survey. Owen & Sloan's No. 1 John Roberts, 1,320 feet north and west of SE cor. of Section 136, Block 29, same survey. Pure Oil Co.'s No. 3 Otis Chalk, 2,440 feet south and 200 feet west of NE cor. of Section 125, Block 29, same survey.

Montague County

Arco Oil Co.'s No. 6 N. J. Howard and others, 100 feet north and 275 feet east of the most southerly SW cor. of its 40-acre lease out of J. Chambliss Survey, A-123.

Wichita County

Consolidated Oil Co., Apple & Brandeberry's No. 1 G. B. Ancell, 150 feet south and east of NW cor. of SE SW, Section 11, Block 7, H. & T. C. Survey. Empire Gas & Fuel Co.'s No. 1 Kemp & Kempner, 150 feet north and west of SE cor. SW, Section 57, Kemp's Wichita Valley Lands. Grayce Oil Co.'s No. 2 E. Daume, 150 feet south and east of NW cor. of south 45 acres of north 55 acres of east 110 acres of the N half of Section 1, S. P. R. R. Survey, A-266; No. 3, 150 feet south and 1,170 feet west of NE cor. of south 45 acres of north 55 acres of east 110 acres of the north half of the same section. Magnolia Petroleum Co.'s No. 4 Bertha Ramming, 1,200 feet south and 200 feet east of NE cor. of its 145-acre lease and located in Section 4, T. T. R. R. Survey, A-656. The Texas Co. and others' No. 2 J. L. & T. J. Waggoner, 170 feet south and 150 feet east of NW cor. of Lot 34, Hezekiah George Survey, A-454. Wilson Drilling Co. and others' No. 1 Kemp & Kempner, 150 feet north and east of SW cor. SE, Section 57, Kemp's Wichita Valley Lands. A. T. Wolfe's No. 2 E. Daume-Coble, 150 feet south and 1,470 feet west of NE cor. Section 1, S. P. R. R. Survey, A-266.

Winkler County

Southern Crude Oil Purchasing Co.'s No. 1 Ida Hendricks, 2,310 feet south and 330 feet west of NE cor. of Section 44, Block 26, School Land. Texon Oil & Land Co.'s No. 1 Central State Bank of Abilene, 330 feet north and east of SW cor. of the W half SE Section 41, Block B-5, School Land.

Young County

F. J. Ahlstron and others' No. 1 W. W. Farmer, 600 feet south and 150 feet west of NE cor. of Section 2, Colorado Braces and Navarro County Survey, A-118. Holmack Oil Co.'s No. 3 R. L. Watson, 150 feet north and west of SE cor. NE Section 22, Young County School Land, A-1,284. J. J. Moran and others' No. 4 Graham Stewart, 1,050 feet south and 150 feet west of NE cor. of their 45-acre tract out of D. Dawson Survey, A-76. Reed and others' No. 4 Mrs. O. W. Mathews, 1,050 fet south and 150 feet west of NE cor. of their 80-acre lease out of A. Rohus Survey, A-240. Riggs and others' No. 1 W. F. Brown, 150 feet north and west of NE cor. of south 17 acres of W. F. Brown's 95-acre tract out of S. Tynes Survey, A-274. Ruthada Oil Co.'s No. 3-A E. C. Stovall, 200 feet north and 150 feet east of SW cor. of Lot 31, E. C. Stovall Subdivision and located in J. Toblin Survey, A-279.

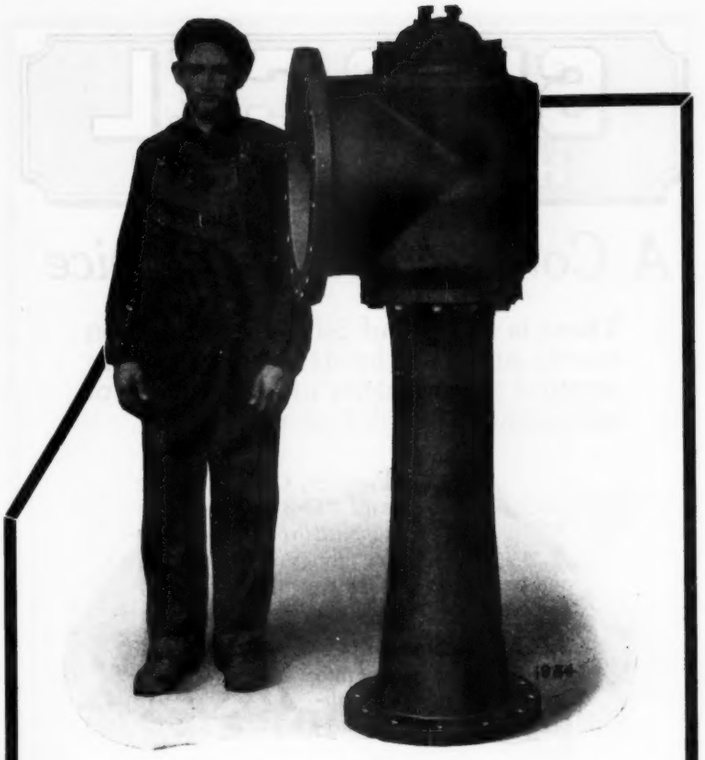
TEXAS PANHANDLE

Carson County

McMan Oil & Gas Co.'s No. 2 J. L. Noel, 330 feet south and east of the NW cor. of SE SE, Section 196, Block 3, I. & G. N. Survey. Roxana Petroleum Corp.'s No. 4 C. R. Garner and others, 330 feet north and and 990 feet west of the SE cor. of Section 106, Block 4, same survey.

Hutchinson County

Rowland and others' No. 1 Johnson Brothers, 155 feet south and 330 feet west of NE cor. SW NW Section 22, Block



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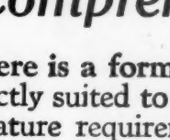

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A CORRECTION: The cracking units pictured in our advertisement on the front cover of the April 14, 1927 issue of Oil and Gas Journal are Cross Cracking Units.

Y. Herman Brothers' No. 1 E. Cockrell, 230 feet south and 330 feet east of NW cor. of the N half of NW Section 3, Block B-3, D. & S. E. Survey; No. 2, 220 feet north and 200 feet east of SW cor. of the N half of NW of the same section. McMan Oil & Gas Co.'s No. 1 E. Cockrell-Martin, 220 feet south and 290 feet east of NW cor. of the S half NW of the same section. McMillan Oil Corp.'s No. 1 J. M. Sanford-Pool, 330 feet south and east of NW cor. of south 40 acres of east 80 acres of north 160 acres of south 320 acres of Section 82, Block 46, H. & T. C. Survey. Oil Operators Trust Co.'s No. 1 J. M. Sanford, 330 feet north and east of SW cor. of east 40 acres of north 115 acres of the same section. Phillips Petroleum Co.'s No. 10 J. A. Whittenburg-Tinnie, 3,605 feet north and 990 feet west of SE cor. of south 480 acres of Section 71, Block 46, same survey. Prairie Oil & Gas Co.'s No. 2 J. M. Sanford, 330 feet south and 365 feet east of NW cor. of north 80 acres of south 480 acres of Section 85, Block 46, same survey. Rock Creek Oil Co.'s No. 1 Johnson Brothers, 330 feet north and east of SW cor. NW SE, Section 28, Block Y.

Moore County

Skelly Oil Co.'s No. 1 Armstrong & Byrd, 330 feet north and east of SW cor. of F. Baremore Survey.

Wheeler County

Word Oil Co.'s No. 3 J. H. Jackson, 990 feet north and west of SE cor. of Section 11, Block 27, H. & G. N. Survey.

KENTUCKY-TENNESSEE

(Continued from Page 62)

Hammond heirs' farm, is a 25-bbl. initial producer and their No. 1, on the Harry Litteral farm, is a 10-bbl. pumper.

In Floyd-Knott Counties, District 21, the Ivyton Oil & Gas Co. has a good gas well in No. 1 on the Beaver Creek Coal Co.'s property.

In Lee-Owsley Counties, District 18, Williams & Cawood's No. 4, on the John P. Fraley farm, is a 10-bbl. pumper.

In District 20, Wolfe County, Crit Childers' No. 4, on his own property, is a 5-bbl. pumper.

In the Ophir District 20, of Morgan County, George & Toumas' No. 10, on the L. D. Holbrook farm, is a 2-bbl. pumper.

Western Kentucky

Barren and Ohio Counties are the active developing spots in the Western Kentucky Field, which with improved weather should show a nice increase in completed work in the near future, especially in these two counties.

The inability to bring any new wells in the rich Ambrose Pool, in Ohio County, is due the heavy decline in new production from the previous week's output, but several wells within the rich producing area are about due for completion.

A wildcat is being drilled on the Dick Bell farm, 8 or 9 miles northwest of Pellville, and in Daviess County. If this should prove a commercial producer it will widen the producing area and bring about an active drilling campaign outside. This well will test out the shallow sands and, if found dry, will be drilled down for lower possibilities.

Ohio County

In the Ambrose Pool, Nos. 5 and 6, on the Scott Ambrose farm, are both reported in the sand, but their value as producers is yet unknown. Leases in Ohio County have taken quite a boost of late for everyone is looking for productive areas like the Ambrose Pool. A lease that was purchased some months ago at $1 an acre, brought $100 per acre last week.

The best completion reported for the week from the Ohio County Field, was H. A. Henry's No. 3 well, 600 feet from the north line and 200 feet from the east line of the S. V. Flowers 32 acres, south of the Panther Creek Oil Co.'s Miller farm and west of the Lon Helm farm. The oil was found in the Barlow sand and the first 24 hours production amounted to 30 bbls. This well when settled should make around 6 bbls. daily. The well drilled by Doctor Lang and others, a pure wildcat, located south of Rouch River far to the southeast of present production and near Sunnydale, has been drilled in and given a shot, and is estimated as good for 8 bbls. and a heavy gas pressure. This is one of the most encouraging finds in the county since the Ambrose Pool, to the north was opened and will encourage more test work toward the southern part of the county.

After getting a duster in the first well drilled on the Askins 56 acres, south of the Joe Bob Ellis farm, and west of the lower part of the Guenther-Gant lease, and just east of Collier, Carroll, Claypool and Powers drilled in their No. 2 well, 400 feet away from the dry hole, and it is showing for a fairly good producer. This will mean an extension of the Swope Pool to the south.

To the south of Whitesville, D. Bowling found what looks like a nice Jett sand pay on the Dickens lease which means a slight extension to production.

Barren County

Five completions are reported from the Glasgow Field of Barren County. In the Emery-Moore Pool, the Merrifield-Sinning Oil Co.'s No. 6, on the Hale farm, is a 6-bbl. pumper at 550 feet.

In the Gorby Pool, J. W. Porter and others' No. 5, on the Chamberlain farm, was a dry hole at 460 feet.

The Lecta Pool, some 3 miles southeast from Glasgow, is the busy spot of the county at this time. Jones & Breeding's No. 1, on the Mayfield farm, failed to show a producer in the Blue sand and goes as a duster. Hunt, Mitchell and others found one of the same kind at No. 9 on the Vance Taylor farm, and Harrington and Norris Brothers could do no better in their No. 4 on the C. B. Jones farm, which was dry.

In the Bowling Green Field, of Warren County, Owens, Brentz and Tange Oil Co.'s second well, 100 feet from the north line and 1,880 feet fro the west line of the James Deathridge farm, southwest of Bowling Green, produced 8 bbls. initially from the deep sand at 1,028 feet.

Tennessee

The second completion by the Celina Oil Co., R. E. Blick, president, on the W. R. Hawkins farm, near Lock Branch School, along the Clay-Jackson County, Tennessee, line, is reported better than 250 bbls. initially at 271 feet. In the same vicinity, the White Plains Oil & Gas Co.'s No. 1 Carver farm, is reported dry at 270 feet, but may go to a lower sand.

Across the state line in Goose Creek district, Cumberland County, Kentucky, Lee Thomelson's test, on the Paten Smith farm, drilled to a total depth of 1,323 feet and proved dry. Expectation was that a prolific pay sand would be encountered in this well at around 1,191 feet, but it failed and was then sent to the depth drilled without results.

Mississippi

No completions are yet reported as completed in the Amory Field, of Monroe County, since the gasser on the Carter farm was found, but at least three of the seven tests under way should soon reach a depth where something definite could be had.

The White well No. 2, in Copiah County, is reported with a big load of salt water at 2,800 feet, and reported dry.

The test drilled near Iuka, in Tishomingo County, was abandoned at 2,210 feet.

HEATING VALUE OF GAS

LOS ANGELES, Calif., Apr. 30.—Reductions of the rates charged by the Southern Counties Gas Co. within its territorial limits has been asked by the city of Santa Barbara in a petition filed at the local offices of the State Railroad Commission. The petition asserts that mixed gas containing only 750 heat units per 1,000 cubic feet is being served, although the city is within 40 miles of natural gas wells.

PETROLEUM ENGINEER HAS PLAN FOR CO-OPERATION IN OIL INDUSTRY

By Earl Oliver

Co-operation is defined as collective action of persons for their common benefit. Collective action requires collective thinking. This is an attempt to crystallize into a concrete thought the many suggestions that have been offered by various individuals. The questions involved extend far beyond the petroleum industry. They dovetail in with our entire politico-economic structure. A comprehensive consideration of that structure is perhaps more important to the proper solution of these problems than is an intimate study of the petroleum industry.

For purposes of convenience this discussion shall be divided into several parts which are, in the order of their approach:

1. Need of co-operation.
2. Industrial versus government control.
3. Means of developing voluntary co-operation.
   (a) Efficient methods.
   (b) Impartial justice between co-operating parties.
   (c) Absence of monopolistic price-fixing tendencies.
   (d) General statement—detail of proposal.

Need of Co-operation

There is growing appreciation of the theory that competitive extraction of oil and natural gas from the reservoirs in which nature stored them is wholly indefensible. Gas and air drives, gas lifts, recycling gas, retention of pressures, increasing natural gasoline yields, cracking processes, improved geological methods and appliances, existing and impending floods of oil—all have combined to make necessary greater co-operation in the handling of oil pools. Leaders of the industry appear to be in agreement upon this point but a deadlock exists regarding ways and means of bringing it about. Shall it be through agencies of government or of industry—and if through industry, by what form?

Industrial Versus Government Control

The Federal Oil Board did a remarkable piece of work in the clear-cut analysis it made of the petroleum situation and in the extent to which it directed thought of the industry toward certain conditions that should be corrected. But in all that splendid analysis there is perhaps no part that stands out more clearly as an example of sound political economy than its definition of the relationship that should exist between government and the petroleum industry in working out these problems, when it stated:

"The major part of the measures that must be taken to protect our future supplies must rest upon the normal commercial initiative of private enterprise. The field for governmental action is considerable, but to formulate the broader by-laws of the industry in the sense of conservation and to concentrate thought upon them is the major part of the board's task in co-operation with the industry."

There has always been and perhaps will always be a tendency that needs to be resisted to do by legislation that which can be more effectually or as fully accomplished by the citizens themselves. Notwithstanding the natural impatience to pursue the easier way and hasten progress by legislative enactment, sober consideration compels the conclusion that not sufficient is known about the needs of the industry—about the methods that should be applied—to impose them by legislation and thus freeze upon the industry mistakes that will be difficult to correct. The forward movement should be planned carefully, step by step. Each experiment will point the way to a further advance. But very great flexibility is necessary in any plan to permit utilizing the new information that will constantly develop. This is not possible under legislative enactment.

Attempts at Compulsion

The recent attempts to correct by compulsory legislation certain obvious evils of the petroleum industry are not unnatural. They are but the familiar incidents of economic progress in any movement. So long as the need for correction exists efforts will be made to accomplish it by legislation and the defeat of any such proposal does not end the danger—it is merely delayed, accumulating force. The proposals recur again and again, each time more formidable. The danger to the industry, then, is that if it does not undertake those things which are so obviously its duty it will find itself burdened with legislative enactments depriving it of that freedom of action it now enjoys and can retain if it shows a disposition to correct its own problems.

It might be added the problem goes much deeper than above discussed, extending into disputed questions of the desirable degree of paternalism in government as well as into the question of leadership in industry; but these cannot be followed at great length in a discussion of this character. It is sufficient regarding the first to say that under American theory and practice, other matters being equal, industrial rather than governmental control is preferable. In this instance, assuming the petroleum industry shows a good-faith disposition to correct its own problems, the scales decidedly incline to the industrial side. If it does not show such disposition, then, willing or unwillingly, American theory or otherwise, there remains nothing but for government to take up that leadership which industry does not assume.

Question of Leadership

Regarding the question of leadership it is sufficient to say if industry will not assume the intelligent direction of its own destiny then government must assume that burden. No great movement can safely go undirected, nor will it long do so. The industry has many strong men. They function 100 per cent as leaders in their own organizations. Yet the industry drifts helplessly into one period of overproduction after another. This, of course, is no criticism of those who could, and no doubt would lead well and wisely, but it is criticism of industrial competition gone mad. There cannot be leadership without united action and there cannot be united action where intense and keen competition is the predominating motive underlying and guiding every policy of the units of the industry.

Periods occasionally occur in industrial progress when competition is so keen as to defeat its own purpose, public welfare, and that period has certainly arrived in the petroleum industry. Where that occurs not only is the raw material of the industry unduly wasted but as a matter of self-preservation competing units are forced either to combine with or to destroy each other. To survive they combine. This they do in greater and greater units until one unit becomes predominant enough to set the pace and the others are content to follow. It is the survival of the fittest—frequently to be observed throughout economic history. Thus excessive competition leads inevitably to monopoly, and monopoly in turn to government supervision and government control. Competitive drainage is the driving force that brings such floods of oil as to develop excessive competition in all branches of the industry. If that competition be reduced at its source its pressure will be reduced all along the line, maintaining sufficient only to protect the public in price and yet not so much as to defeat its own purpose.

Developing Voluntary Co-operation

If co-operation is to be developed by the industry, the machinery of co-operation should be fashioned so as to insure:

(a) Efficient methods.

(b) Impartial justice between co-operating parties.

(c) Absence of monopolistic price-fixing tendencies.

It is important that each of these three conditions exist, but it is of almost equal

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importance they be handled in such manner as to secure both private and public confidence that they do exist. Confidence is prerequisite to co-operation. Knowledge, in turn, is the base of confidence. Consequently, the machinery of co-operation should be so designed as to give the utmost information to the respective parties and to the public in so far as the interest of each are concerned.

Efficient Methods

Development and production methods are now in transition stage. Little is known today regarding what might appear best next year, and the year after that, except that it is known little progress can be made until co-operation between operators in common drainage areas is obtained. When that is achieved, petroleum technologists have many methods ready for application, the worth of which has been demonstrated. Furthermore science is only now starting on its study of petroleum and will constantly develop new methods. The application will be slow or rapid accordingly as the machinery of organization makes that difficult or easy. It is, therefore, desirable that any arrangement be sufficiently flexible as to permit easy application of improved methods from time to time as they develop.

Impartial Justice Between Co-operating Parties

Confidence that impartial justice exists is to co-operation what sunshine is to growing crops. There are certain types of relationship that breed suspicion irrespective of whether or not there is cause for suspicion. On the other hand, there are types of organization that breed confidence. For instance, self-interest is recognized as a stronger motivating force with the average human being than is recognition of the rights of others. Where these two forces are in conjunction, confidence is engendered. Where they are in conflict, confidence is dispelled. Arbiters are uniformly selected from disinterested parties.

In any system of co-operative extraction, some agency will be constantly passing upon minor details that affect the respective rights of the several owners. If the machinery of co-operation is so designed that the personal interest of the individuals making those decisions is enhanced by a rigid maintenance of impartial justice, then not only is impartial justice likely to be maintained, but what is of almost equal importance, the several co-operating property owners will not without good reasons question its being maintained. If, however, those in charge have personal or company interests that might be benefited at the expense of the common good, that condition alone would breed suspicion that would make co-operation difficult.

Machinery of Co-operation

It is important, therefore, that the machinery of co-operation be composed, in so far as possible, of neutral personnel. That neutral agency would be professional in its capacity, qualified by experience and training, have no prejudicial interest in the subject matter passed upon, be under obligation to one party no more than to another, and be compensated jointly by the parties whose differences are passed upon. Its functions would therefore, be judicial. Its success professionally would depend upon the degree to which it could render sound, impartial decisions. If it failed, it could be discharged and another appointed. Arrangements could be incorporated in the original agreement between the owners for the easy removal of an incompetent adjuster and the substitution of another in its place. Its personal and professional standing, therefore, being directly dependent upon the degree to which it secured co-operation and satisfied all parties as to the fairness of its decisions, the tendency would be toward impartial justice.

Naturally each competing producing company would have its own technical men fully acquainted with the company's respective rights. The neutral agency would work with and be responsible to that department as well as to like departments of competing companies. The records, plans, recommendations and reasons therefor of this neutral agency would at all times be open to all interested parties and to public officials, thus affording utmost information to all parties entitled to have information.

Co-operation is necessary, but even with co-operation it is highly desirable each owner or property maintain the maximum control of his own property consistent with the exigencies of the particular situation. It is, therefore, important this neutral agency be directly responsible to the parties owning the properties involved, subject to being employed and discharged by their collective action and given as much or as little authority as they collectively may deem wise.

Absence of Monopolistic Price-Fixing Tendencies

Regardless of the attitude at the moment of any state or federal administration relative to co-operation, whether it be friendly or otherwise, the student of economic history knows monopoly is never long free from government control. Administrations are temporary, while politico-economic principles are permanent. No industry may safely disregard them. Neither may political parties.

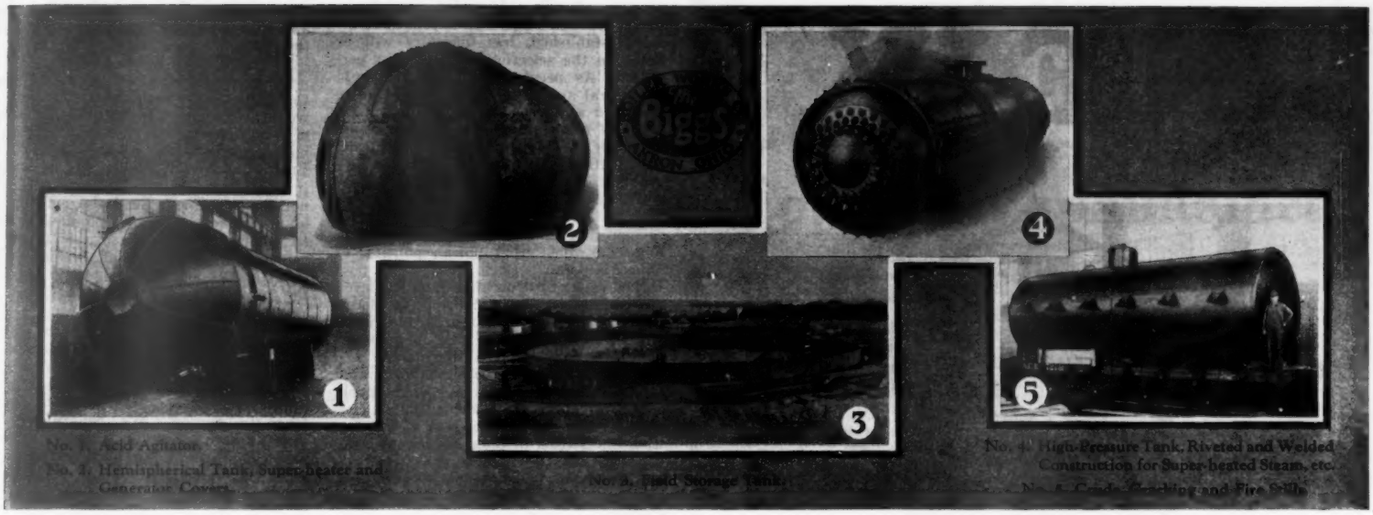
There is no monopoly in the petroleum industry at this time, but there are several large companies which, if they work closely enough together, would have the effect of monopoly and be subject to political attack and government control as such. Co-operation between them as producers in common drainage areas would not be monopoly, but it could easily have the appearance of being that, which for purposes of political attack or political strategy would amount to the same thing. Also such co-operation could easily and would quite naturally, under certain circumstances, degenerate into monopoly. Co-operation, in some form, must come, but it is well the industry select that way with care. The line between co-operation for conservation purposes and that for price fixing is not now well defined, but the machinery of co-operation should be so designed as to emphasize and keep that distinction clear not only in the public mind but in that of company employes as well.

This could be achieved by the employment of neutral agencies to study the proposal as an engineering project, draw plans, make recommendations, transact negotiations and do those things which would brand that transaction for all time as a conservative measure. The records of the neutral agency would be open for inspection; its plans and recommendations would be convincing proof of the reasons and purposes underlying such move. Thus would be built up a distinct profession in the industry, devoted to securing the type of co-operation that is needed. It would be qualified to discriminate and be under no temptation and therefore under no suspicion of developing the other type of co-operation. Having always in mind the danger of monopolistic interpretation being placed upon its proposals it would gradually build up such distinction as would effectually differentiate them, making them impervious to political misinterpretation.

General Statement—Details of Proposal

It thus appears co-operative extraction is a highly technical problem involving several previously unrelated lines of endeavor. It involves chemistry, physics, geology and oil industry practice, all of which might be grouped under petroleum engineering. However, almost equally important are questions of petroleum law, of antitrust law, of political economy, and human psychology. The two general groups are not closely related—and this explains the failure of many attempts at co-operation. The engineer has been prone to ignore in his proposals fundamental principles of law and political economy, while the lawyer, on the other hand, has paid little attention to highly important engineering principles.

Any satisfactory solution will make many changes in oil industry practice, but yet it must harmonize with those principles of science, law and economics that form the skeleton of our industrial structure. Furthermore, the transition should be gradual. It is obvious any agency attempting to initiate such activ-



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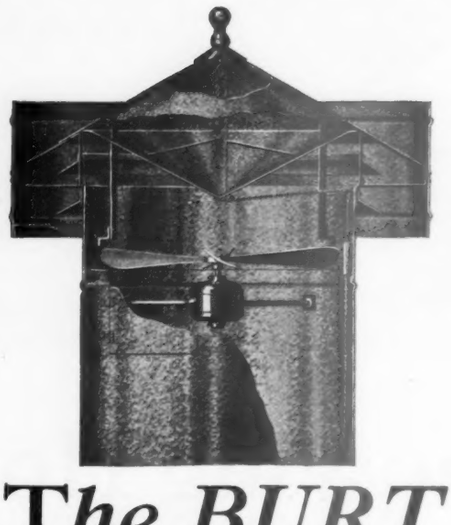

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These ventilators have an extra wide wind band which not only insures stormproofness but increased efficiency of the ventilator when the fans are shut down. The inverted cone which is used for a damper, does away with the possibility of any eddying currents forming in the top of the ventilator and insures that no abrupt angles will be encountered in the expelling of the air. The damper is equipped with fusible links which automatically close in case of fire. This is highly essential in most installations because the drafts must be shut off as soon as the fire starts. If desired, these dampers can be connected with a throw switch which will insure the cutting off of the current as well as the closing of the dampers. This precaution is hardly necessary, particularly if the dampers are closed, as the fans even though running, will simply churn the air.

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ity should have the combined ability and wisdom of men of varied experience. Later, when the basic principles have become established, less difficulty will be found in the selection of competent personnel. As previously stated, it should be neutral and disinterested except as to the need of accomplishing results. Its point of contact with the owners would naturally be through the technical departments of the operating companies.

Unit of Co-operation

A fundamental principle that must ever be kept in mind is that the unit of co-operation should be individual pool, not some other geographical, political or industrial unit. Each and every pool will have its own peculiar land or development problems that can only be determined and prescribed for by individual study of the particular pool in question. If a pool is studied in this manner and co-operation started with the beginning of development it would be comparatively easy to keep the pool under complete control. Problems occurring day by day would be settled in the same manner. Co-operation in the past has operated too much on the principle of blanket proposals as distinguished from individual studies.

While the procedure in every case would be different, its normal functioning, as an illustration, might be that the oil company proposing to start a wildcat well in a region where it did not have lands compactly blocked would engage the co-operative extraction engineering firm to secure such preliminary agreements with near-by lease owners as is deemed desirable. Perhaps the first function of such engineering firm would be to organize the acreage owners of the probable common drainage area into something analogous to a chamber of commerce of that area, but these details and methods in each case would depend upon the requirements of that particular case.

Geology and land information of the several companies that is not confidential in character would be turned over as a basis on which the engineering concern would prepare a preliminary plan of gradual development, first perhaps for the approval of the employing company of the organization of the lease owners had not yet been effected, or for their mutual approval if already organized, or perhaps receive one already worked out by the technical organization of one of the several companies. With these approved plans, it would approach the various lease owners seeking to secure their adherence to such co-operative effort. Agreements relative to rates of development and such other points as might seem desirable would be secured. The fee for services rendered would be distributed proportionately among all those whose co-operation is secured.

Maintaining Co-Operation

The co-operative extraction engineering firm would continue to function during the entire time of active development as a common point of contact between the several or many operators in the common drainage area, seeing that each operator was conforming strictly to the agreements—and supplying each participant with the requisite information. The whole and sole function of such engineering firm would be securing and maintaining co-operation in the particular pool. It would be employed by the participating operators collectively, discharged by them, paid by them, and receive instructions from them collectively. It would be the agency's duty to carry out what the operators collectively agreed upon. It would have no authority except what they gave collectively. In so far as authority is concerned it would be little more than the secretary of the chamber of commerce of that particular drainage area, promoting co-operation and executing instructions the collective body issued.

The proposal has importance only in that its successful launching would be the start of a general movement resulting in co-operation evolved through the industry's own agencies under its own control and yet which would remain free from suspicion of monopolistic tendencies. It would not be an immediately effective panacea but its corrective influence would be as rapid as knowledge and experience within the industry point the way.

Within Local Control

It would be flexible, adjusting itself to the needs of each local situation. It would be completely within the control of local operators in each pool. Its maximum unit would be a local pool. Its organization would consist of the owners in that pool. It requires no legislation, nor does it comprehend the employment of government agencies. In lieu of these it would require a reasonable degree of collective thinking among leaders of the industry. Hence its proposal is put into the form of this general letter.

We have no illusions about the difficulties of such project, but we do believe if such character of co-operative effort is once started its general growth will be rapid as its value is demonstrated.

Our interest is confined to getting the force in motion. We believe by this means the industry can solve its own problems through its own agencies and with the owners retaining as much or as little control of their own properties in each pool as they collectively might wish to do. Each pool, by collective action, would make its own rules—and select the engineer it wished to have inspect their enforcement—rather than be subject to government regulations enforced by government inspectors. The industry would remain self-governing and yet would be enabled to handle its affairs so as adequately to protect the public interest.

Lease Broker's Life In Louisiana Field Surely an Adventure

PLAIN DEALING, La., Apr. 30.—The life of a lease broker assembling a 5,000 or 6,000-acre wildcat block may or may not be one of little labor in various sections. But in North Louisiana it's an adventure. While a prominent broker in that section don't mean to be discouraging to the fraternity, he nevertheless contends that anyone working in what is arbitrarily his territory must be something of the he-man type, with a bit of sex appeal and the patience of a river boat poker player.

Just to prove his contention one night during the course of a wildcat drilling campaign in a Louisiana hotel lobby, he unburdened his mind and related a part of the cost of assembling such a block.

"Lost 1,345 hours of needed sleep thinking about titles. Lost two front teeth and a handful of hair in personal encounters. Donated one beef, two shoats and five sheep for community barbecues. Gave away three ownership maps to persons who wanted them merely as a curiosity. Gave away two pair of suspenders, four calico dresses and $5 in cash for prizes for the next parish fair.

"Made love to nine widows, five grass and four sod. Hugged 49 old maids. Attended 16 revivals and contributed $50 to foreign missions. Kissed 126 babies and risked holding half of them. Kindled 14 fires and pumped 3,299 gallons of water.

"Plowed 140 acres of ground and walked 476 miles over plowed ground and through swamps hunting a land owner. Shook hands with 9,508 people, and told 10,001 lies. Talked enough to fill 100 volumes if all of the conversation had been typed. Was chased over a 160 by an enraged bull. Tore nine pair of pants going through barbed wire fences. Was dog bitten 39 times, and killed 11 cats.

"Finally secured the block by compromise."

FUEL ENGINEERING COURSE

The University of Pennsylvania has announced a one-year course in fuel engineering, leading to degree of master of science in fuel engineering. This course will be given at the Towne Scientific School.

OIL INDUSTRY IS NOW OPERATING AT OR BELOW COST OF PRODUCTION

By O. P. Keeney*
President, National Petroleum Association

Recent months have witnessed one of the sharpest and most drastic price declines in the history of the oil business. Mid-Continent crude oil of 36 gravity, as an example, has been cut $1.28 per barrel, or 55 per cent, since last November, while U. S. Motor gasoline in Group 3 has suffered a decline of about 3½ cents a gallon, or 33 per cent. The petroleum industry, as a whole, is now operating at, or below, the cost of production. A decent return on the capital invested in oil is conspicuous by its absence.

What is the cause of this price disaster?

The answer is simple and direct: Overproduction. Overproduction not only of crude oil, but of refined products as well. This overproduction has manifested itself in three principal directions: In the competitive drilling of the Seminole district, in the overdevelopment of new pools in West Texas, and in the overstimulation of refinery operations.

The Seminole district is an aggregate of numerous pools, with a sand of almost unprecedented richness, yielding an oil of extraordinary high gasoline content. The rate of extraction of this oil, moreover, has been accelerated by two circumstances: A lease condition calling for immediate drilling and the development of a new technique of flowing wells by gas pressure. Seminole has contributed a veritable flood of high-grade oil quickly convertible into gasoline.

West Texas is an oil region in early stages of development, which is a potential source of supply of vast quantities of flush oil, rather than a present source of overproduction. At least four fields of apparently major proportions are just being opened up, and there is little question but that the output could be quickly raised to several hundred thousand barrels per day, were there any need for the oil.

To add to all this, the refiners have not been backward in doing their best to contribute to the general oversupply. During the closing months of 1926 and the opening months of 1927, the manufacturers of petroleum products increased their runs, speeded up their gasoline output, and in general expended their operations as if a limitless demand for oil lay immediately ahead. All this is now well known, after the price structure has collapsed.

Two Ways to Remedy

What is the answer?

There are only two ways in which a condition of oversupply can be remedied. Either it is to be avoided by individual foresight in preventing its occurrence, or else price will see to it that it is unprofitable to continue this condition. It is too late to talk about foresight. The sad truth is that the industry must now take its licking. We can all contribute just a little to mitigating the severity of this licking if we curtail our productive efforts until equilibrium is again established and stocks reduced.

So much for the general petroleum situation.

Now turn to things nearer home, not near enough home to bring to mind individual worries, but toward the association. We can overlook some of our troubles, both general and particular, when we consider how satisfactorily the National Petroleum Association is moving ahead.

Self satisfaction is dangerous, but as members of the National Petroleum Association we can be rightfully proud that our association is undoubtedly moving forward along many lines. Some of these lines are new and unusual for associations of oil men.

Our co-operative engineering service and exchange of information through the department of manufacture were new and untried ventures. Their success, however, is unmistakable. When 19 of our members, through our co-operative engineering service, at a nominal expense, reduce their fuel costs from 10 per cent at the minimum, to 48 per cent at the maximum, and make an estimated annual total saving of $154,940, or a yearly average saving per refinery of $8,150, then this is proof that the association is moving forward.

The work of the department of standards and tests also helps to prove that the association is moving ahead. This department is systematically and intelligently tacking the problems of securing greater uniformity in testing results, the devising of better methods and the more general adoption of standard testing methods.

Progress of N. P. A.

Splendid progress has been made in the organization of the Fire Marshals Association and in the formation of local groups of fire marshals. Undoubtedly, thousands of dollars will be saved by these effective efforts in fire prevention.

When the association frankly faces the problems put on our program for this meeting by the department of trade and commerce, such as standardization of cylinder stocks and statistics of stocks; and later on the collection and use of price statistics, there is no question but that even a sincere attempt at the solutions of these problems shows that the association is indeed moving ahead.

The vital question of profits or losses necessarily involves manufacturing costs. A number of the larger companies have worked out systems of refinery cost accounting that are invaluable in helping their executives to run their business. Our department of accounting and statistics has undertaken to work out this problem for practical adaptation by all of our members. It is intricate, difficult and not yet solved, but the intelligent effort along this line shows again that our association is moving forward.

The other departments are also progressing splendidly, as you will learn from the work of the departments of legislation and litigation, membership and relations, and traffic and transportation.

At this time I wish to express my appreciation and thanks to Mr. Dow and his assistants who have done so much to make our association move forward.

Also I wish to thank all the members who have voluntarily given generously of their time and thought and energy and who have had so large a part in the splendid progress.

Of the many fine traditions of the National Petroleum Association, none is finer than that of voluntary personal service given so generously by the members. This is not only an association by and for refiners, but an association of refiners who have put more than money into its work.

Movement is a law of life. Sometimes the movement is forward or upward, and sometimes the movement is backward or downward, but there is never—for any considerable period if, indeed, for any period whatever—an entire lack of any movement. Momentum is a law of movement. An object moving backward is apt to keep on moving backward. An organization moving forward has the help of momentum to move further and faster. We must not lose the advantage of our momentum, for if we do we will not stand still, but will soon be moving backward.

The National Petroleum Association is unmistakably moving forward and its forward momentum is an encouragement and a challenge for each member to do his part to make this forward movement continue and increase.

*Before semiannual meeting, National Petroleum Association, Cambridge Springs, Pa., April 28.

GAS LINE TO AMORY

Construction has been started on a 4½-inch gas line from the wildcat gas well recently brought in in northeastern Mississippi to the town of Amory, 8 miles northwest. T. L. Driscol of Indianapolis, Ind., has been granted a franchise to supply Amory and Aberdeen

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MEXICAN SITUATION CHANGING TO MORE OPTIMISTIC FEELING

By L. M. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue. New York, N. Y.

NEW YORK, Apr. 30. — Sentiment among the oil companies doing business in Mexico has undergone a noticeable change in the past few weeks, with a shift toward a more optimistic feeling as to the clearing up of the long-standing oil controversy. Representatives of several companies when asked to comment on the statement of President Coolidge, made in an address before the United Press in New York, that the Mexican ambassador had recently "declared to me that she (Mexico) does not intend to confiscate our property," said they believed the basis of a solution was being reached, although no immediate results were anticipated.

It is expected in oil circles that the judgment of the Mexican Supreme Court in pending amaparos brought by the oil companies against the operation of the petroleum law will be awaited, and that these decisions will have a bearing on the future handling of the matter. In the meantime there is a possibility that machinery will be put in motion for arbitration of the problem and if arbitration is decided upon, the final disposition of the questions involved will be some distance off.

Leaders of the oil industry pointed out that the clarity of President Coolidge's statement regarding Mexico should do much to remove misconceptions as to the attitude of the foreign oil industry toward the Constitution of 1917 and the petroleum law promulgated, December 31, 1925, and put into effect December 31, 1926. They also hailed as encouraging the Government's attitude toward the foreign activities of American industry.

President Coolidge stated that as a matter of historical record, the American Government has usually been too remiss, rather than too active, in supporting the lawful rights of its citizens abroad, and he described the new policy of protection as one of moderation, warning against undue exploitation.

As an illustration of the misconception that sometimes involves the issues around a foreign problem and the readiness with which oil is cited as a motive for a foreign policy, President Coolidge stated the case of Nicaragua. Contrary to the general impression, he said, there are no oil properties in that country. "Nevertheless, I have seen cartoons that pictured it as filled with derricks."

That the Government continues to hold the view that the supplementing of our oil supplies with foreign sources is vital to this country, was directly stated by the President, and this attitude is taken as highly important by petroleum industry leaders, who stated their belief that this section of the President's statement could not be overemphasized.

"Our country consumes vast quantities of oil and gasoline," the President stated. "in its use of automobiles, gas engines and oil-burning furnaces. If these products are to be kept within a reasonable price, which is very important to a great body of our citizens, our people who go abroad to develop new fields and to increase the supply ought to have the encouragement and support of our Government."

In another respect President Coolidge's address is regarded as particularly pertinent respecting petroleum development. He called attention to the fact that in the past foreign interests have had investments in this country running into several billions of dollars. Being made at a time when we had insufficient capital to develop our own resources, such investments, he pointed out, were most helpful in building our railroads, opening our mines and supporting our manufacturing. As we have come into surplus capital we have shown an increasing disposition to extend this same service to other countries. Our people have gone abroad with their investments, their technical skill and commercial ability, to assist in opening up undeveloped countries.

With respect to foreign investments in oil in the United States, it is of interest in connection with the President's remarks that the Royal Dutch-Shell interests comprise one of the most important in this country, and that their operations are expanding steadily.

INTERNAL REVENUE RULING IN OIL CASE

WASHINGTON, D. C., Apr. 30.—In the case of the Caribou Oil Mining Co., petitioner, versus Commissioner of Internal Revenue, the United States Board of Tax Appeals has interpreted Section 283 (k) of the Revenue Act of 1926 as continuing the procedure outlined in the Revenue Act of 1924 with respect to appeals following jeopardy assessments made under the provisions of the Revenue Act of 1924.

In dismissing this petition, Chairman Korner, referring to the procedure outlined in the foregoing, stated:

"Under that procedure the right of a taxpayer to appeal to the board is based solely on the final determination by the commissioner of a deficiency in his rejection of a proper claim in abatement filed within 10 days of the receipt of the collector's notice and demand for the tax so assessed. Since no such claim was ever filed by this taxpayer the letter of May 14, 1926, does not constitute such a final determination of deficiency and no appeal lies to the board therefrom."

NEW ELECTRIC PLANT FOR PECOS VALLEY CO.

A new plant being built near McCamey, Tex., by the Pecos Valley Power & Light Co. will be ready to start service to counties in Southwest Texas on July 15. The plant is equipped with three 6,000-kilowatt turbogenerators furnished by Westinghouse Electric & Manufacturing Co.

The Pecos Valley Power & Light Co. already has contracts with the Big Lake Oil Co., Marland company of Texas, the Gulf Production Co. and subsidiaries of these concerns. Power will be supplied for well pumping, compressor drives, pipe line pumping, gasoline plant operation and many incidental power uses.

The plant is being installed by the Bickel Contracting Co., which built the plant of the Panhandle Power & Light Co. in 90 days. Lines are being surveyed to serve all pools in Southwest Texas and particularly Crane, Upton, Pecos, Winkler, Reagan and Crockett Counties.

PREST-O-LITE GIVES OUT IMPORTANT STATEMENT

"The Prest-O-Lite Co. announces the sale of the storage battery branch of its business to a new company, Prest-O-Lite Storage Battery Corp. The entire capital stock of the purchasing company is owned by the Automotive Battery Corp. of New York. That portion of the Indianapolis plant of The Prest-O-Lite Co., Inc., used for the manufacture of storage batteries has been leased to the new company.

The Prest-O-Lite Co., Inc., while discontinuing the battery branch of its business, will continue the manufacture and sale of acetylene gas for use in the oxy-acetylene process of welding and cutting metals, automobile lighting, lead burning, etc. These operations have, in the past, constituted the major portion of its activities. In addition to continuing its acetylene business, involving the operation of 32 acetylene plants, located in industrial centers throughout the country, The Prest-O-Lite Co., Inc., will continue operation of that portion of its Indianapolis plant devoted to the manufacture of gas cylinders, acetylene generators and other apparatus."

GULF COAST FIELDS

(Continued from Page 96)

Dome: Gulf Production Co.'s No. 8 Craig is drilling below 4,379 feet. No. 3 Sanborn is around 2,165 feet. No. 2 Parkinson is drilling at 1,535 feet, with a location for No. 3 Parkinson.

Orange County—W. C. Wells' No. 1 Stark is at 1,100 feet. Miller Drilling Co.'s No. 1 in the Gum Island section is rigged to start.

Trinity County—The Dixie Oil Co. is making core tests on a tract of 14,000,000 acres in the southwestern part of the county along the Trinity River.

Houston County—The Porter Oil Co. quit No. 1, near Crockett, at 3,830 feet after vainly fishing for drill pipe twisted off in the hole. The derrick was skidded over and another well will be drilled.

Washington County—Pratt-Hewitt Oil Co.'s No. 1 Kriminsky is drilling around 2,435 feet. Two other tests are shut down.

Burleson County—G. W. Hindman, of Houston, is rigging No. 1 Carr.

Shelby County — Arkansas Fuel Oil Co.'s No. 1 Bouland, reaming at 3,200 feet. Clark & Melat No. 1 Pickering Lumber Co., drilling 2,898 feet.

South Louisiana

Cameron Parish — Hackberry Dome: Yount Lee Oil Co.'s No. 4 State land, drilling below 2,900 feet. No. 6 School land is around 4,975 feet. No. 10 Gulf land is drilling below 3,390 feet, with 7-inch casing set. The Union Sulphur Co.'s No. 1 Little is at 1,835 feet fishing. Pure Oil Co.'s No. 5 at Sweet Lake is drilling at 1,380 feet. Border Research Co.'s No. 1 Mallard Bay is at 2,790 feet and shut down. No. 1 in Sabine Lake is also idle, with surface casing set.

Calcasieu Parish—Sulphur Dome: Union Sulphur Co.'s No. 720 fee is at 4,525 feet, shut down waiting for cement to harden after setting casing. Hintsze and others' No. 1 Binkenstein is drilling around 4,375 feet. Border Research Co.'s No. 1 Calcasieu Lake is at 4,525 feet.

Assumption Parish — Union Sulphur Co.'s No. 1 School lands, abandoned at 1,195 feet.

Iberia Parish — Eagle Point Dome: Gulf Refining Co.'s No. 2-Z State land is shut down, as is No. 1 Broussard. Calcasieu Oil Co.'s No. 1-A Schwing is below 2,828 feet. Border Research Co.'s No. 1 Vermillion Bay is around 1,200 feet.

Evangeline Parish — Pine Prairie Dome: The Texas Company's No. 2 Guillory is drilling around 4,700 feet. The Ville Platte Petroleum Co. is rigging No. 1 Fontent.

Jeff Davis Parish—Estropal Oil Co.'s No. 2 Duex is showing gas around 3,000 feet. F. I. Getty's No. 1 LaCassine is shut down.

High water has caused a suspension of drilling in St. Martin, St. Mary, and Ascension Parishes.

The Gulf Refining Co.'s drilling crew on the United lands in Ascension Parish, east of the Mississippi River, was conscripted to help protect a levee.

SOUTHWEST WILDCATS

(Continued from Page 105)

Woods is location 5 miles southeast of Beeville. Nichols & White's No. 1 Hicks, Block 19, NW cor. Hicks-Ball Survey, near Normanna, is drilling at 1,500 feet.

Brooks County

The Texas Company's No. 1 Lasater, Survey No. 329, Gyp Hill, located 1,250 feet to north line and 1,100 feet to east line, is having timbers moved in.

Brewster County

Van McPhail's No. 1 McIntyre, Survey No. 59, Block 352, located 150 feet to SE cor. and 8 miles south of Alpine, is moving in rig.

Caldwell County

Sun Oil Co.'s No. 1 Martindale, J. D. Dial Survey, 3,988 feet to west line and 1,643 feet to north line, topped chalk at 1,134 feet and is now drilling at 1,724 feet. It topped the Edwards lime at 1,525 feet. Dextex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling on the Lockhart Road, is drilling at 1,300 feet. Sun Oil Co.'s No. 1 Talley, Swearingen Survey, 650 feet to northeast lines and 1,675 feet to southeast lines, topped chalk at 2,340 feet and has been abandoned dry at 2,530 feet. Lou Gould Sheddan's No. 1 W. F. Davis, Salt Flats, has been spudded in. Fred Adams' No. 1 Walter Ellison, near Seawillow, total depth 2,335 feet, tested dry. It is to be given a small shot and another test. Sutton & Smith's No. 2 Robert Carter, G. Hinde Survey, at 2,601 feet tested a small amount of oil, and is being rigged up to go on the pump.

DeWitt County

Empire Southern Oil Co.'s No. 2 Smith, is getting ready to spud in. McNeil & Matthews' No. 1 A. D. Kaiser, A. Dillard Survey, 1,508 feet to NW cor., is drilling at 2,000 feet.

Dimmitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey No. 654, located 700 feet to north line and 2,000 feet to east line, is drilling at 1,942 feet.

Fayette County

LaFayette Oil Co.'s No. 1 Marquardt, Phillips Survey, 976 feet to northwest lines and 400 feet to southwest lines, is shut down for repairs in Yegua formation.

Goliad County

Houston Oil Co.'s No. 3 Pettus, 10 miles west of Goliad, is drilling in gumbo at 2,804 feet; No. 2 Parks, 8 miles east of Goliad, is drilling at 3,416 feet.

Guadalupe County

Pat Armstrong's No. 1 Dale is shut down in the top of the chalk at 1,652 feet. F. A. Lain's No. 1 F. C. Weinert, W. K. Estell Survey, 150 feet to CNL, is drilling at 1,645 feet in sandy shale.

Hays County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, has completed rigging up and has set casing to shut off water in preparation to making a test.

Karnes County

Earl B. Reynolds' No. 2 Butler, Block 43, located 1,000 feet south of No. 1, is completed as gas well at 1,947 feet. Alamo Drilling & Leasing Co.'s No. 1 Szalwinski, Manchaca Survey, 500 feet to northeast lines and 200 feet to southeast lines, is setting casing at 1,803 feet.

Kerr County

Walker-Van-Duyn's No. 1 Leigh, Survey No. 38, located 500 feet north of river and 150 feet south of railroad, is sidetracking at 2,250 feet.

Kinney County

W. A. Stephens and others' No. 1 Jim Clamp, Survey No. 346, center of Block 345, is shut down at 550 feet. Havelin Oil Co.'s No. 1 well, 18 miles from Del Rio, is shut down in sandy lime at 4,315 feet, reported to have shown oil.

Lampasas County

W. B. Abney and others' No. 1 well has been spudded in and is drilling at 100 feet within city limits of Lampasas. J. B. Davis-Lee Bullock's No. 1 Bunch is drilling in shale at 1,100 feet. S. L. Smith and others' No. 1 Faught, 2 miles from Nix, is on rock at 400 feet, with slight show of gas.

Lavaca County

Steinman Brothers' No. 2 Steinman (fee), 4 miles southeast of Yoakum, is drilling at 2,760 feet.

Live Oak County

Stoval & Kelly's No. 1 Stewart, William J. Cannon Survey, 200 feet west of Nueces River, is preparing to drill. Warren Wood Hunt's No. 1 McNeil, Jane Curry Survey, 4,000 feet to NE cor., has been spudded in. Houston Oil Co.'s No. 3 Sellers, J. Muelin Survey, is location 700 feet to center of north line; No. 17 Cartwright, Cannon Survey, 1,500 feet southeast of No. 1 Riverbed, is drilling at 2,300 feet; No. 1 Dunning, Kivlin Survey, has set casing at 2,055 feet; Henderson Coquat's No. 5 Sartain, completed as a gasser at 1,297 feet, had mud come in and shut off gas, and casing is now being pulled and the well will be deepened. J. W. Walton's No. 1 Rob-

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erts, west of Three Rivers, is drilling at 1,782 feet.

Medina County

Medina Oil Co.'s No. 12 Taylor, Survey No. 135, is location. Empire Southern Oil Co.'s No. 1 Allen has derrick up. Schermerhorn Oil Co.'s test on the John Degent Survey has derrick up. Witherspoon Oil Co.'s No. 2 Redus, Survey No. 92, at 1,122 feet, tested salt water; No. 1 Nixon, Survey No. 119, located 1,500 feet to east line and 1,600 feet to south line, is drilling at 1,365 feet with chalk topped at 1,310 feet. R. P. O'Brien's No. 1 Nixon, Survey No. 531, SE cor., is shut down at 800 feet. Fennell & Williams' No. 2 John Fohn, Survey No. 115, east 100 acres, at 1,272 feet, is 50 feet in shale, showing traces of oil. J. H. Gray and others' No. 1 Mann, Survey No. 16, located SE cor., is shut down at 1,158 feet. Ina Oil Co.'s No. 2 Finger, Survey No. 746, Lot 5, located 1,525 feet to north line and 2,794 feet to west line, is in Edwards at 1,565 feet. Wheless & Peter's No. 1 Berger, Survey No. 341, is shut down at 1,315 feet. California-Medina's No. 1 Rothe is pulling casing at 3.119 feet in preparation to drilling deeper.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey No. 14, center, is shut down to let cement set at 820 feet. Johnstone & Hout's No. 1 Whipff, located 9 miles from Eagle Pass, is milling up casing show at 1,210 feet. Rycade Oil Corp.'s No. 1 Chittim, 18 miles from Eagle Pass, at 5,588 feet, gauged 28,980,000 feet of gas and about 150 feet of high gravity oil, with tools still lost in the hole; No. 2 Sullivan is drilling below 4,000 feet with 12-inch hole.

McMullen County

R. L. Taylor's No. 1 Shiner, Survey 8, NE cor., is rigging up; No. 2 Shiner, Survey No. 14, located in SW cor., is to start within 30 days of the completion of No. 1. Nelson & Woods' No. 1 Shiner, Block 47, Survey No. 48, located 1,000 varas to east line and 350 varas to south line, has resumed drilling. George Pickett's No. 1 Jacob, Survey No. 7, located 600 feet to center north line, is drilling at 1,940 feet.

San Patricio County

F. S. Smiley's No. 1 T. E. Wilson, one-quarter mile northwest of Angelita, has derrick up. W. L. Pearson's No. 6 Cage, Rachall Survey, is location 1,500 feet south of No. 5. Huber & Crawford's No. 1 Mathis, Delgavo Survey, 300 feet to northwest lines and 2,500 feet to southwest lines, is drilling at 2,275 feet. John Sigmund's No. 7 McCampbell, previous report in error, is drilling at 4,000 feet, total depth of old hole 4,021 feet.

San Saba County

George W. Pennington and others' No. 1 Blackard, Section 333, located 900 feet to NW cor., has been spudded in. Wilmot Oil Co.'s No. 2 Rocky Pastures, 9 miles northeast of San Saba, is drilling at 900 feet.

Zavala County

J. G. Pundt is moving in machinery on the West lease for the No. 1 West.

SOUTHWEST TEXAS

(Continued from Page 51)

County, in Block 8, Share 10, Comitas grant, is rigging up. Roxana Petroleum Corp.'s No. 1 Lopez, in Survey 288 of Zapata County. Humble-Reiter-Foster Co.'s No. 6 Kohler, in Duval County, in Survey 400, is located 600 feet west of No. 4, which is a 20-bbl. wildcat oil well at 2,709 feet.

Locations in Bexar

In the Somerset Field Associated Petroleum Co. has made location for No. 15 Caruthers in the William Caruthers Survey, 604 feet north of No. 13, location for No. 2 Ernest in the McSnyder Survey No. 266, located 550 feet west of No. 1 Marland Oil Co. has made location and is moving in tools to drill on irrigation company land in western Bexar County.

In Medina County Schermerhorn Oil Co.'s No. 5 Medina Valley Farms is a new location in Block 3, J. Degent Survey No. 31, 2,500 feet north of No. 1. Western Gas & Fuel has made location for No. 11 Adams in Durst Survey No. 13, 1,550 feet northwest of No. 10 in the Adams gas field. Western Gas & Fuel and Medina Syndicate have made location for No. 1 Nixon, west of the Adams gas field, in Survey 13, located 922 feet from the east line and 281 feet from the north line of the 44½-acre Nixon farm.

In McMullen County E. R. Marts, of Dallas, has made location for No 8 Poitevant in J. Poitevant Survey 56, 1,250 feet from the south line and 150 feet from the southwest line.

In Maverick County Hume-Lindenborne have made location for the No. 1 Mat Hanchin, 3 miles north of Eagle Pass, and have spudded in.

In Milam County F. Caudley has made location for No. 3 Leutge in T. J. Chambers Survey, 300 feet northwest of No. 2.

In San Saba County, C. J. Williams has made location for a wildcat well on a 3,300-acre block in the northwest corner of the county.

Cole Gas Field—Duval

Cole Petroleum Co.'s No. 37 Benavides, Survey 21, Block 6, located 150 feet to southeast lines and 450 feet to southwest lines, is rigging up; No. 38 Benavides, Survey 10, Block 12, located 155 feet to northeast and northwest lines, has derrick up; No. 41 Benavides Survey 18, Block 8, located 660 feet to northwest and northeast lines, is drilling at 600 feet; location has been made for No. 42 Benavides, Survey 23, Block 2, 660 feet to northwest and northeast lines; Barkley-Meadows-Morgan's No. 3 Harper, Survey 323, on Gulf lease, is rigging up. Houston Oil Co.'s No. D-1 S. Benavides, Survey 387, Myrtle E. Hale subdivision 155 feet to southwest and southeast lines, is moving on; No. A-2 S. Benavides, corner of Blocks 407, 408, 409, 410, is on sand at 1,594 feet and set casing at 1,580 feet.

O'Hern and Seacord Field

Magnolia Petroleum Co.'s No. 2 Benavides, Survey 174, Block 7, located 330 feet to northeast and northwest lines, is drilling at 545 feet (depth reported last week in error). O. W. Killam's No. 1 Bruni, Survey 585, at 600 feet to east line and 150 feet to north lines, reported last week abandoned at 1,854 feet is to be deepened. Moody Oil Corp.'s No. 1 J Benavides, Block 40, Mesquite ranch, subdivision No. 1 located 150 feet to northwest and southwest lines, is drilling at 2,400 feet.

Piedras Pintas

Humble Oil & Refining Co.'s No. 1 Carrillo, Survey 82, located 300 feet to east line and 3,200 feet to north line, is drilling at 626 feet.

Randado Field—Jim Hogg

Livingston & Ritcheson's No. 1 Palacious, Survey 287, Block 18, 150 feet to northwest corner and 2,000 feet east of production, is on sand at 1,360-65 feet and waiting to set casing.

Henne, Winch & Fariss Field

Magnolia Petroleum Co.'s No. 27 Martinez, Survey No. 276, located 1,750 feet to east line and 2,525 feet to north line, is testing at 2,062 feet.

Kitselman & St. Albans

Edward St. Albans No. 7 Lopez, Share No. 1, Block No. 7, located 750 feet to south line and 916 feet to west lines, is drilling at 1,200 feet; No. 8 Lopez, Share No. 1, Block No. 7, is a location at 1,058 feet to south line and 974 feet to west line. K. & S. Corp.'s No. 57 Holbien, Survey No. 17, Block No. 40, located 330 feet to NE corner, is testing at 2,398 feet.

Alworth Pool

Magnolia Petroleum Co.'s No. 22 Merchants State Bank, Survey 236, located 450 feet to west line and 150 feet to south line, is drilling at 1,235 feet.

Aviator or Bruni Tracts

Ray Wood and others' No. 1 Puig, Block No. 5, Puig ranch 150 feet to northwest corner has derrick up.

Schott Pool—Webb

Laredo Oil Co.'s No. 12 J. M. Garcia, NW SW, Survey No. 458, located 760 feet to west line and 160 feet to north line, is drilling at 1,968 feet. Jones-Garcia Oil Co.'s No. 3 Garcia, Survey No. 463, at 150 feet to northeast corner, is rigged up and standing. Location is being made for Magnolia Petroleum Co.'s No. 7 Garcia a new test in Survey 58.

Albercas Field

O. W. Killam's No. 2 Bruni, Block No. 65, located 470 feet to east line and 1,470 feet to south line, is drilling at 1,250 feet; No. 3 Bruni, Block No. 64, located 150 feet to north line and 450 feet to west line, is drilling at 1,700 feet.

Mirando Valley Field

J. L. Johnson and others' No. 1 Anderson, Survey 2,363, Block No. 6, located 150 feet to southwest corner, is at 1,881 feet on sand and waiting for casing.

Carolina-Texas Field

D. J. Simmons No. 2 de la Garza, Survey 335, Block 8, located 150 feet to SW cor., is drilling at 400 feet. T. P. Morgan's No. 1 de la Garza, Survey 335, Block 23, located 150 feet to SE cor., is standing at 2,295-2,307 feet and showing oil. It will be abandoned. Houston Oil Co.'s No. A-1 Barnsley, Survey No. 268, Block No. 14, located 450 feet to south line and 900 feet to east line, is drilling at 520 feet. Breen-Ingersoll and others' No. 1 Webster, NW NE NW, Survey No. 684, located 150 feet to NW cor., is moving on. Morgan-O'Hern & Seacord's No. 1 Webster, SE NW, Survey No. 684, located 150 feet to SE cor., has resumed drilling at 2,609 feet depth at which test was abandoned and is now coring at 2,640 feet. Barnsley-Chicago Syndicate's No. 2 de la Garza, Survey No. 335, Block No. 22 located 810 feet to south line and 150 feet to east line, is drilling at 250 feet after having set surface casing at 50 feet.

Cole Field

Cole Petroleum Co.'s No. 43 Benavides, Survey No. 412, Block No. 13, located 1,060 feet to east line and 450 feet to south line, 1,200 feet east of No. 36 Benavides recently completed, has derrick up.

Mirando Valley Pool-Zapata

The Texas Company's No. 5 Jennings, Cerrito Blanco grant, Zapata County located 10,700 feet to southeast lines and 7,000 feet to southwest lines, which showed oil at 1,461 feet, set and cemented gas and tested dry, was again cored and showed oil again. Liner is now being set for test.

Rockdale Field—Milam County

Lowenstein Oil Co. is skidding derrick over for No. 1 well on its 56-acre lease, offsetting No. 1 Henne & Meyer recently drilled by Kent-Middleton within corporation limits of Rockdale for 50 bbls. or better. Kent-Middleton are moving derrick in for No. 1 Dan Wooten which is an offset to No. 1 Henne & Meyer on the south. No. 1 well of the Lowenstein Oil Co. will offset the new well on the east. Chicago Oil & Land Co.'s No. 5 Gambill, 300 feet east of the No. 1, at 1,365 feet is estimated good for 40 bbls. daily initial on the pump; No. 6 Gambill, offsetting No. 3 on the north, is on hard rock at 675 feet. Coffield-Hale & Noack's No. 1 Vance, SW cor. of lease, and 700 feet north of Chicago Oil & Land Co.'s No. 3 Gambill which extended the eastern section of the field to the north, is ready to drill in and if it makes a commercial well will result in another northern extension to the eastern section. Coffield & Hale's No. 1 Alford, north of city limits on the Brushy road, is ready to drill in, waiting for cement to set; No. 3 John Hicks, in city limits of Rockdale and offsetting No. 2 on the west, is drilling below 900 feet. Noack Oil Co.'s No. 5 Seelke, T. P. Chambers Survey, 300 feet southeast of No. 2, is drilling around 500 feet.

Adams Gas Field—Medina

Temeco Oil Co. (Henderson & Holden) No. 1 Chandler, Survey 461, located 860 feet to west line and 390 feet to north line edge of field, has been completed at 970 feet making 27,500,000 feet gas daily. Western Gas & Fuel Co. and C. E. Lang's No. 5 Adams, Survey 72, 1,600 feet north of No. 4, is drilling at 460 feet.

Refugio Gas Field—Refugio

Houston Gulf Gas Co.'s No. 3 Holmes Heard is a failure. Gas blew out the tools, but it is impossible to complete

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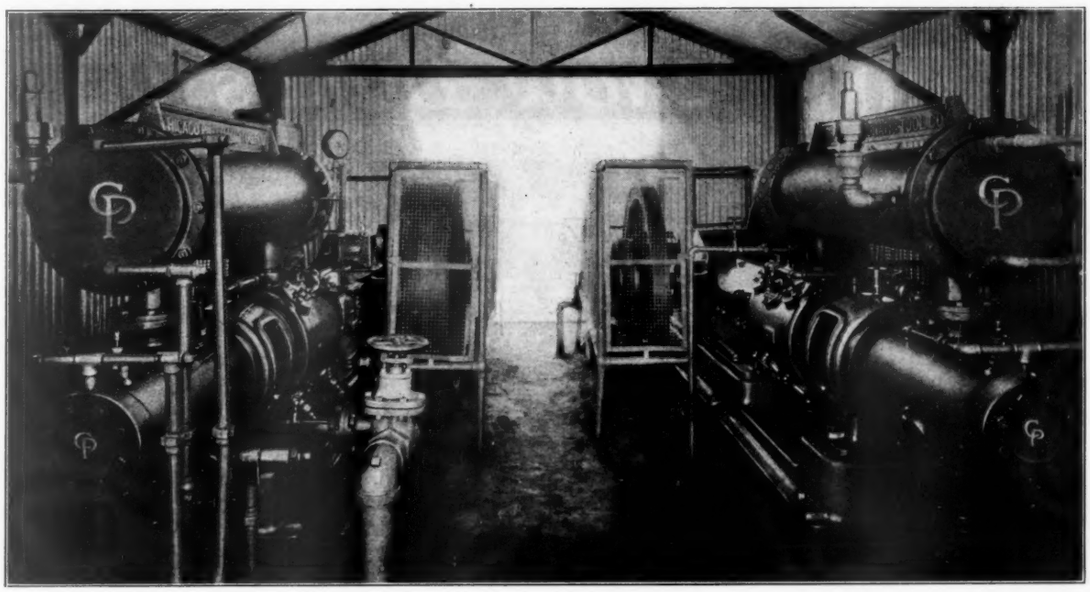

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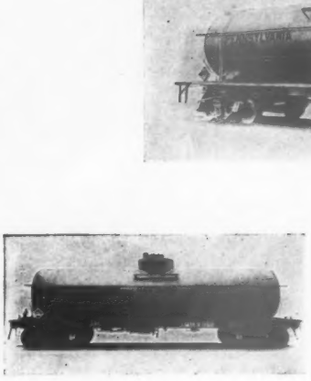

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it, and it will be abandoned; No. 3 Fox, Lot No. 4, Block 5, Town tracts, is coring at 2,240 feet; No. 3 Moody, Town tracts, is drilling at 1,000 feet. William F. Morgan's No. 2 Rose Rogers, northeast of No. 1 in Powers Survey, half a mile from production, is drilling at 1,100 feet; No. 1 Lambert, at 2,120 feet, tested big gasser and casing is to be set and test brought in.

Kingsville Field—Kleberg

Houston Oil Co.'s No. 1 Kivlin, Lot No. 7, Section 50, located 660 feet to SE cor., is moving in rig to complete, total depth 710 feet. Carter-Walsh's No. 1 Flato, King land, Lot No. 29, is setting casing at 1,887 feet. Humble Oil & Refining Co.'s No. 3 Kleberg Trustee, Lot No. 1, Section No. 40, located 150 feet to NW cor., is drilling at 2,807 feet; No. Kleberg Trustee, Lot No. 8, Section No. 40, located 150 feet to NE cor., is drilling at 2,850 feet; No. 3 King, east of Cayo Del Grullo and 500 feet north of No. 3 King, is drilling at 1,600 feet; No. A-3 Dennett, NW cor. Lot No. 2, Section No. 39, is drilling at 900 feet; No. 1 Kivlin, NW cor. Lot No. 5, Section No. 39, is setting 10-inch casing in cement at 1,876 feet.

Luling Field—Caldwell & Guadalupe

Magnolia Petroleum Co.'s No. 3 Carter, Cottle Survey, located 500 feet northeast of No. 2, has been completed at 2,156 feet making 25 bbls.; No. 5 Branyon, James Berry Survey, 400 feet northeast of No. 1, is drilling at 1,990 feet; No. 18 Trammell, Reaville Survey, located 200 feet to SE cor., has been completed at 2,186 feet making 110 bbls.; No. 10 Proctor, J. Henry Survey, 300 feet SW of No. 9, has been completed at 2,114 feet making 80 bbls.

KANSAS FIELDS

(Continued from Page 44)

sand at 2,860 feet, drilled to 2,869 feet and was shot with 40 quarts after which it made 25 bbls. J. A. Hull Co.'s No. 5 School Land, NE cor. SE SW Section 15-32-4, is a 1,000-bbl. well in sand at 3,268-74 feet. Leighty and others' No. 1 Beinhorn, SW cor. NE Section 17-32-4, is dry and abandoned at 3,357 feet. Pattee, Tyrell and others' No. 1 City of Winfield, SE cor. NE NW Section 22-32-4, in the State Pool, was completed for 4,500,000 feet of gas from sand at 2,278-2,302 feet. McNabb & Sidwell's No. 1 Mitishler, SW cor. Section 33-32-4, is dry and abandoned at 3,557 feet.

Elk County

Cosden and others' No. 1 Osborn, SE cor. NE SE SE, Section 28-29-10, is drilling at 1,200 feet. Elmwood Oil Co.'s No. 1 Miller, SW cor. Section 14-30-10, is a dry hole at 2,345 feet.

Ellsworth County

Osage Oil Co. made location for No. 1 Blank, C NE Section 18-14-9w.

Greenwood County

Connell Oil Co. and others made location for No. 1 Cragan, SW cor. NW NE Section 32-22-11. White and others' No. 3 Gray, NE cor. NW NE Section 26-24-9, is drilling at 1,400 feet.

Empire Gas & Fuel Co.'s No. 17 Kipfer, C SE Section 11-22-11, is a 25-bbl. well after it was shot with 200 quarts in sand at 1,780-1,851 feet. Stark and others' No. 1 McMullen, SW cor. Section 21-23-12, is dry and abandoned in sandy lime at 1,942-51 feet.

Lyon County

Gasche & Balliere's No. 1 Scott, NW cor. Section 32-20-13, has been abandoned at 1,915 feet.

Marion County

Empire Gas & Fuel Co. has the rig on the ground for No. 1 Ely, NW cor. NE SW, Section 36-20-3. The Prairie Oil & Gas Co. made location for No. 1 Mowyer, SE cor. NE, Section 21-17-4.

Phillips Petroleum Co.'s No. 1 Razineck, NW cor. SW Section 22-17-4, was completed for 1,000 bbls. in sand at 2,392-2,418 feet. Cross, Frank and others' No. 1 Harke, NE cor. Section 2-18-4, has been abandoned without making any hole.

Reno County

Sheldon and others' No. 1 Magnuson, SW cor. NE SE, Section 10-23-4w, was abandoned at 4,090 feet.

Rice County

The Prairie Oil & Gas Co.'s No. 3 Walstein, NW cor. NE, Section 2-21-6w, swabbed 650 bbls. the first 24 hours from sand 3,401-32 feet.

Russell County

Midwest Refining Co. made location for No. 3 Mermis, SE cor. Section 18-12-15w. Location was also made for No. 6 Dortland, NW cor. SE Section 5-14-15w.

Wilcox Oil & Gas Co.'s No. 2 Munsell, SW cor. NE Section 17-12-15w, is dry at 3,656 feet. Keys Petroleum Co.'s No. 1 Dortland, C NW NE Section 8-14-15w, after having a 15-bbl. show was abandoned at 3,057 feet.

Sumner County

Roxana Petroleum Corp. made location for No. 8 Riverbed, NW cor. SE SW Section 25-31-2, in the Churchill Pool. No. 8 Churchill, SW cor. NE SW Section 25-31-2, is spudding. Location was made for No. 9 Churchill, NE cor. NW SE SW Section 25-31-2.

Roxana Petroleum Corp.'s No. 4 Riverbed, CWL SW SE NW Section 25-31-2, was completed for 750 bbls. after it was shot with 80 quarts in sand 1,833-1,903 feet.

Wilson County

Allison & Fitzwilliams' No. 1 Daniels, SW cor. NW Section 3-27-14, is dry and abandoned at 1,395 feet.

FARMINGTON, N. MEX.

(Continued from Page 42)

track the lost tools in the bottom of the 3,200-foot hole, as soon as the work is completed.

Frank Ellis, field manager for the H. L. Williams interests, was in from the Seven Lakes district Saturday and stated they would spud in their well Monday This well is located 1 mile north of the Midwest Refining Co. discovery well, and is on Section 30-18-8. They express confidence they are on the Hospah structure.

The Midwest Refining Co., operating in the Seven Lakes district, Section 1-17-9, is straightening the hole in the discovery well after drilling past the lost tools. They are also rigging up on well No. 2, which is located west of the discovery well, and is in Section 2-17-9. It will spud in the last of this week or the first of next.

The pipe line runs for the week ending April 16 showed a small increase for the San Juan Basin Field, and consequently for New Mexico, as Artesian remained the same. The runs by structures were as follows: Table Mesa, 550 bbls.; Rattlesnake, 830; Hogback, 750; total for the San Juan Basin, 2,130 bbls. Artesia, 1,950 bbls. Total for New Mexico, 4,080 bbls. The Klem-Taylor interests, operating on the Bayfield structure, Section 12-34-7, has again been delayed by breakage in machinery and have made little progress since our last report, when they were nearing the Farmington sands.

OKLAHOMA FIELDS

(Continued from Page 44)

the Wilcox sand, the top of which was 2,688 feet. Phillips Petroleum Co.'s No. 1 Burton, CEL NW NE Section 4-14-12, is making 35 bbls. from the Wilcox sand at 2,664-76 feet after it was shot with 20 quarts. Hampton & Wylee's No. 1-A Jordan, NW cor. SE NE Section 31-12-12, is making 10 bbls. after a shot of 40 quarts in sand at 1,192-1,242 feet.

Okfuskee County

Transcontinental Oil Co. made location for No. 1 No Name, NW cor. NE NW Section 34-12-8. Champlin Oil & Refining Co. has the rig on the ground for No. 6 Holmes, NE cor. Section 22-11-11.

Josey Oil Co.'s No. 5 Hulsey, NE cor. SE NE Section 32-12-11, came in for 25 bbls. from the Wilcox sand at 3,643-50 feet. Burke-Greis' No. 1 Deer, SE cor. NE NE, Section 1-10-9, was deepened and completed for 22,000,000 feet of gas in sand at 3,155-78 feet.

Osage County

The Texas Company has the rig up for No. 1, NW cor. SE Section 28-26-6,

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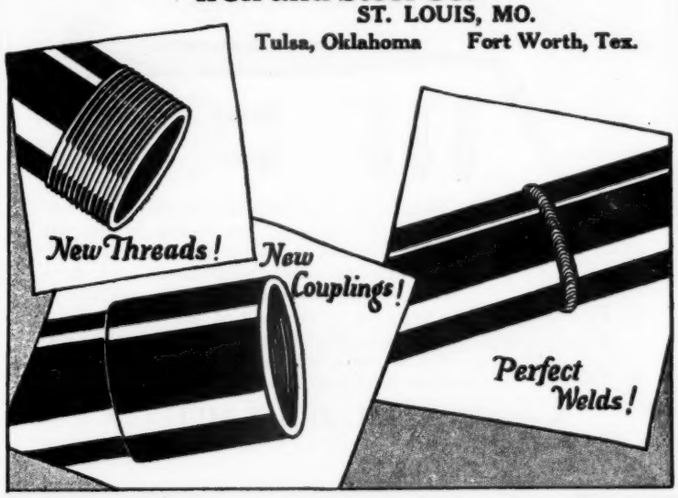

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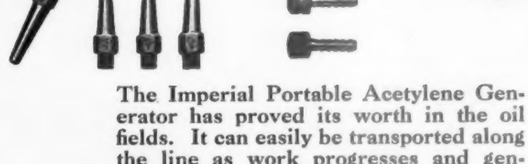

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in the Burbank Pool. Phillips Petroleum Co. made location for No. 1, NE cor. NW NE Section 23-26-10. Indian Territory Illuminating Oil Co. made location for No. 1, SE cor. NE Section 8-25-7.

Midland Oil Co.'s No. 1, SE cor. NE SW Section 23-27-11, was completed for 15 bbls. in the Whiting sand at 1,087-1,112 feet. Phillips Petroleum Co.'s No. 10, SE cor. NW NW Section 7-27-6, is making 125 bbls. from the Burbank sand at 2,946-78 feet. No. 7, NW cor. SE SE Section 20-26-6, Burbank Pool, was shot with 120 quarts in the Burbank sand at 2,890-2,930 feet and is producing 100 bb'ls. Skelly Oil Co.'s No. 12, SW cor. NW NW Section 28-26-6, made 160 bbls. after it was shot in the Burbank sand at 2,884-2,938 feet. Barnsdall Oil Co.'s No. 1, NW cor. NE Section 3-25-5, found the Burbank sand at 2,950-3,032 feet to be dry and was drilled to 3,077 feet and abandoned. The Texas Company's No. 5, NW cor. SW SW Section 29-25 8, is dry at 2,482 feet in the Burgess sand. No. 13, NE cor. NW NE Section 30-25-8, is producing 60 bbls. from the Burgess sand at 2,450-68 feet. No. 14, SW cor. NW NE Section 30-25-8, had the Burgess sand at 2,430-62 feet and is good for 80 bbls. Peters Petroleum Corp.'s No. 1, NE cor. NW Section 6-21-10, has been abandoned at 2,172 feet. No. 1, NW cor. Section 6-21-10, is also dry at 1,255 feet.

Payne County

Marland Oil Co. and others have the rig on the ground for No. 1 Lemons, C SE NW Section 10-19-1w. Ponca Oil & Gas Co.'s No. 1 Lewis, SE cor. Section 21-19-1w, has been abandoned at 3,075 feet. Mulberry Oil & Gas Co.'s No. 3 Sharrum, NW cor. NE NW Section 5-17-4, an old well deepened, is making 15,000,000 feet of gas from sand at 3,590-3,674 feet.

Pawnee County

Noble Oil & Gas Co. has the rig on the ground for No. 3 Rule, NW cor. SE SE Section 9-20-7. Gypsy Oil Co.'s No. 1 Bew, SE cor. NE SW Section 21-21-6, has been abandoned at 3,530 feet. Barnsdall Oil Co.'s No. 1, School land, SW cor. NE Section 16-21-7, got a hole ful'l of water in the Turkey Mountain sand at 3,075-3,114 feet. Watchorn Oil & Gas Co.'s location for No. 1 Duff, NW cor. SW SW, Section 11-20-6, has been abandoned.

Pottawatomie County

Pure Oil Co. is building the rig for No. 4 Doyle, NW cor. Section 30-7-4. Independent Oil & Gas Co. and Margay Oil Co. moved the rig out for No. 1 Odell, SW cor. SE Section 4-9-5, Earlsboro Pool. Independent Oil & Gas Co. made location for No. 1 Fowler, SE cor. NE Section 5-9-5. The Texas Company has the rig on the ground for No. 1 Roger, SE cor. Section 5-9-5. Location was made for No. 2 Roger, NE cor. SE Section 5-9-5. Tidal Oil Co. has the rig on the ground for No. 2 Watkins, SW cor. NW NW, Section 9-9-5. The rig has also been moved out for No. 3 Watkins, NW cor. Section 9-9-5.

Philmack Oil Co. and Marland Oil Co.'s No. 2 Dobbs, NE cor. SE Section 8-9-5, Earlsboro Pool, made 7,047 bbls. the first 24 hours from the Wilcox sand at 4,316-20 feet.

Seminole County

Gypsy Oil Co. made location for No. 1 Barkus, NE cor. Section 20-7-7. Atlantic Oil Producing Co. has built the rig for No. 3 Fleet, SW cor. NE NW Section 23-8-6, Bowlegs Pool. Gypsy Oil Co. is building the rig for No. 1 Wise, NE cor. SW NW Section 23-8-6. Carter Oil Co. made location for No. 1-N, Bowlegs, NW cor. Section 27-8-6. McCullough Oil Co. made location for No. 1 Johnson, SE cor. NE NW Section 30-8-6. T. B. Slick made location for No. 1 Harjo, SE cor. SW SW Section 1-6-6. Indian Territory Illuminating Oil Co. made location for No. 12 Livingston, NW cor. NE NW, Section 15-8-6. The rig is being built for No. 3 Billington, SE cor. NW Section 22-8-6. Gypsy Oil Co. made location for No. 2 Cumsey, SW cor. NE SE Section 10-8-6. Carter Oil Co. made location for No. 6 Harjoche, NE cor. SW NW Section 14-8-6. Pure Oil Co. is building the rig for No. 17 Reed, NW cor. SE NW Section 14-8-6. Indian Territory Illuminating Oil Co. made location for No. 11 Livingston, NE cor. NW NW Section 15-8-6.

In the Earlsboro Pool, Magnolia Petroleum Co. is building the rig for No. 4 Seay, SW cor. Section 12-9-5. Location was made for No. 5 Seay, NW cor. SW Section 12-9-5. Roxana Petroleum Corp. is putting up the rig for No. 1 Spencer, SW cor. NW Section 12-9-5. Skelly Oil Co. is building the rig for No. 1 Spencer, SE cor. SW NW, Section 12-9-5. Magnolia Petroleum Co. made location for No. 1 W. Moore, NW cor. NE SE, Section 24-9-5. Empire Gas & Fuel Co. has the rig on the ground for No. 1 Harris, NE cor. NW, Section 25-9-5.

In the Seminole Pool, Carter Oil Co. made location for No. 2 Pounder, NW cor. SE SE Section 34-9-6. Location for No. 4 Strother, SW cor. NE SE Section 34-9-6, was also made. Gypsy Oil Co. is cleaning out No. 1 Island, SE cor. SW SE Section 21-9-7, east of the Seminole Pool, preparatory to deepening. Barnsdall Oil Co. made location for No. 2 Sango, SW cor. NW SW Section 1-9-5, northeast of the Earlsboro Pool. Location for No. 3 Sango, NW cor. SW NW Section 1-9-5, was also made. Carter Oil Co. is building the rig for No. 1 Sango, NE cor. SW Section 1-9-5. Gypsy Oil Co. is building the rig for No. 2 Sango, NE cor. SW NE Section 1-9-5. The Texas Company dug the cellar for No. 2 Brown, SW cor. NW Section 10-9-5, Earlsboro Pool. Barnsdall Oil Co. made location for No. 3 Cudjo, CSL SE Section 11-9-5. Independent and Margay Oil Co. made location for No. 1 Gaines, SE cor. NE NE Section 11-9-5. Magnolia Petroleum Co. has the rig on the ground for No. 4 Holmsley, SE cor. Section 11-9-5. Location for No. 5 Holmsley, SW cor. SE SE Section 11-9-5, was made and location was made for No. 6 Holmsley, NE cor. SE, Section 11-9-5. Barnsdall Oil Co. has the cellar completed at No. 2 Wasutke, NW cor. NE SW Section 12-9-5. Continental Oil Co. has built the rig for No. 2 Hollins, SW cor. SE NW Section 12-9-5. Location for No. 3 Hollins was made, NW cor. SE NW Section 12-9-5, and location for No. 4 Hollins was made, NE cor. SE NW Section 12-9-5. The Prairie Oil & Gas Co. is building the rig for No. 3 Whitney, SE cor. NW NW Section 23-8-6.

F. J. Searight's No. 1-A Youngblood, SE cor. NE SE Section 33-10-6, Searight Pool, lost the hole at 2,600 feet and was abandoned. Roxana Petroleum Corp.'s No. 2 Harbor, NW cor. SW NE Section 10-9-6, Seminole Pool, was shut in for 750,000 feet of gas from sand at 3,685-87 feet. No. 1 Harbor, SE cor. SW SE Section 22-9-6, an old well deepened, topped the Wilcox sand at 4,169 feet, drilled to 4,193 feet and swabbed 1,658 bbls. after it was shot with 20 quarts. Carter Oil Co.'s No. 7 M. Killing, SW cor. NE NW Section 23-9-6, made 1,965 bbls. after a shot of 30 quarts in the Wilcox sand at 4,079-4,109 feet. Carter Oil Co.'s No. 1 Vierson, NE cor. NW SW Section 23-9-6, was shot with 30 quarts and made 1,500 bbls. on air from the Wilcox sand at 4,200-37 feet. No. 2 Vierson, NW cor. SW Section 23-9-6, is a 100-bbl. well in the Wilcox sand at 4,248-71 feet. No. 2 Strothers, NW cor. NE SE Section 34-9-6, produced 2,805 bbls. from the Wilcox at 4,102-30 feet. T. B. Slick's No. 2 R. Cudjo, SW cor. SE SW Section 35-9-6, was shot with 115 quarts and swabbed 281 bbls. from the Wilcox sand at 4,120-60 feet. Independent Oil & Gas Co.'s No. 1 Alexander, NW cor. SE Section 7-9-8, was completed for 41 bbls. in sand at 3,243-81 feet. Amerada Petroleum Corp.'s No. 5 Rascoe, NE cor. SW NW Section 15-8-6, Bowlegs Pool, made 1,155 bbls., the first 24-hour gauge flowing by air from the Wilcox sand at 4,009-42 feet. No. 3 Rascoe, NE cor. NW SW Section 15-8-6, had an initial production of 1,195 bb'ls. on air producing from the Wilcox sand at 4,126-72 feet. No. 4 Rascoe, SE cor. SW NW Section 15-8-6, had Wilcox sand at 4,068-89 feet and made 1,620 bbls. No. 7 Rascoe, SW cor. NW Section 15-8-6, swabbed 330

(Continued on Page 148)

STANDARD OF NEW JERSEY VIEW OF CURRENT CRUDE OIL SITUATION

From The Lamp

The crude oil situation, with especial reference to the excessive stocks on hand, was reviewed in the February issue of the Lamp (published in The Oil and Gas Journal of February 17, page 33). The overproduction of crude and finished products having become more acute, and the price of crude having declined below the average cost of production, except in flush pools, the producers' situation should be of sufficient concern to every element in the industry to warrant a recapitulation of the more recent developments.

Statistics of crude and products in storage, and of current production and consumption are readily available. For the purpose of this study it is sufficient to consider only the general aspect of the present accumulation of crude increasing daily by a production materially in excess of current requirements, and creating a problem of disposal, which in self-interest is individual to every member of the industry.

As compared with the brief periods of flush production of the past which have been terminated by low prices, the industry faces today an era of overproduction that promises to be of extended duration. Low prices are still the effective remedy, but the existence of a crude price below cost over a long period would bring disaster to many in the industry. The conception of a crude situation of relative sufficiency is based not alone upon the uninterrupted activity of drilling operations with increasing production of crude, and the fact that the crude now above ground and to be produced represents by reason of improved refining methods a substantially greater yield of gasoline than ever before, but also upon the existence of known, but as yet undeveloped, reserves of crude. Never in its history has the industry possessed in addition to the huge stocks above ground, undeveloped known reserves of such magnitude, and the existence of these reserves gives to the present period its certainty of extended duration in contrast with the brief and spasmodic intervals of overproduction in the past.

Gasoline Crudes Bear Brunt

Substantial reductions in prices have occurred, affecting in different degree the several classes of crude. In the following table of three classifications, fuel, lubricating and gasoline crudes, it will be seen that the gasoline crudes have borne the brunt of the declines.

Classification of Crudes	Daily Prod. Apr.1	Aver. Price Oct.31	Aver. Price Apr.1	Aver. Pctg. Redtn.
Fuel crudes...	313,058	$1.07	$ .95	10.25
Lubric'g crudes	231,834	2.13	1.72	19.18
Gaso. crudes...	1,932,525	2.13	1.21	43.39
Total U. S....	2,477,417	$2.00	$1.22	38.78

During the past few years the supply of motor fuel has been derived principally from two sources, the distillation of crude and the cracking of fuel oil. The cost of gasoline distilled from crude has been greater than the cost of gasoline produced by cracking fuel oil, and as a result there has been an enormous expansion of cracking facilities. The recent reductions in crude oil prices have in effect been an adjustment toward parity of the relative values of crude and fuel oils for gasoline manufacture. If the production of naphtha-bearing crudes were more than sufficient to supply the entire demand, the value of the natural gasoline might decline to a level below the cost of obtaining gasoline by cracking fuel oil. This would cause a virtual suspension of cracking operations. In such a situation, however, gasoline obtained by natural distillation would no longer be in competition with cracked gasoline, which has been the cheapest source of supply, but solely in competition with itself.

Pertinent Question

A pertinent question is, therefore, whether on the basis of today's production of naphtha-bearing crudes there can be recovered sufficient natural gasoline to supply the total demand, estimated at 342,000,000 bbls. for 1927, or an increase of 6.9 per cent over 1926. This additional quantity of approximately 30,000,000 bbls. could be more than supplied from the increase in production of crude oil which present estimates place at 125,000,000 bbls. If this additional quantity of crude oil is run it will give, on the basis of a 30 per cent yield, 37,500,000 bbls. of gasoline, or 7,500,000 bbls. in excess of the estimated gain in demand. The production of gasoline by cracking during 1926 was 93,736,000 bbls., so that to meet this year's demand the industry would still be obliged to produce by cracking about 86,000,000 bbls. There exists, therefore, no economic reason why the cost of the natural gasoline content of the crude should decline to a price below the cost of gasoline obtained by cracking fuel oil.

The cost of cracked gasoline is determined by the price of fuel oil, therefore, the value of fuel oil is today the foundation of the petroleum price structure. Through the price of gasoline, fuel oil controls the value of crude oils other than the grades utilized for the manufacture of lubricants and specialties. The present crude oil price schedule is on a fuel oil basis, competitive with coal, and if further declines in crude prices occur, fuel oil will be competing only with itself.

Fuel Oil Market

Another pertinent question is whether now, and in the past the industry has not ignored certain economic factors bearing on the fuel oil market. Statistics show that the domestic consumption of coal on a heat value basis is approximately five times the consumption of fuel oil. Further, today's price of fuel oil in most parts of the country is below its equivalent value as compared with coal for power purposes. These conditions alone should cause a substantial increase in the consumption of fuel oil at existing price levels.

Competition with coal for power purposes is, however, of minor consideration in any constructive program for the expansion of the fuel oil market. Since the present overproduction has established the industry's price structure on the value of fuel oil, is it not time to stop looking at fuel oil as an unwelcome by-product? Should not the industry, recognizing its importance in the price structure, now make an effort to place fuel oil on the plane to which it is entitled by its economic value? The higher the plane on which the industry places fuel oil, the higher the value for crude and its products.

May Enlarge Market

The consumption of distillate oils in the direction of power, such as in Diesel engines, or for domestic heating and like purposes, gives it a special value not competitive with coal. With the assurance that supplies will be availble over a long period at a reasonable price, these markets are susceptible of large expansion. Their rapid development is important not only to provide an outlet for surplus production, but also in reduction of the present large stocks above the ground. The industry is justified in allocating a part of its supplies to these superior uses and should be willing to enter into contracts for delivery over longer periods than heretofore.

Once the industry itself recognizes that there will always be a production of fuel oil, the status of that product will be immediately changed. It should come into general use for superior purposes, at a price which will be profitable, and which will exert a favorable influence upon the value of crude and its products.

Prices of crude will continue to be determined by competition and the law of supply and demand. These two forces will be interpreted by crude purchasing companies according to their own views on current production, pressure of current stocks, prospects of shortage or surplus, consumption of products, conditions

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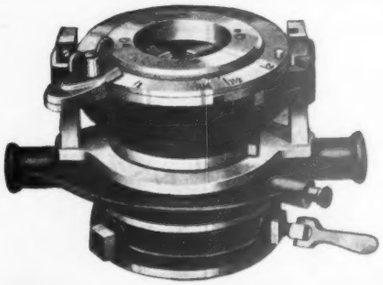

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of general business, etc. If, in the judgment of some or all of these companies the storage of crude at existing price levels is not justified, further declines in price will follow.

New Co-operative Effort

The present situation is the more serious if it fails to enlist the intelligent and co-operative effort of every unit of the industry. The present cycle of overproduction differs from those that have gone before in that its duration for a much longer period than any of its predecessors is almost certain. Measures to meet that condition must be framed with due consideration to this fact, and to the futility of applying to a new and unprecedented situation only the remedy that proved availing under a different set of conditions in the past.

A wholesome ambition would be to effect the utmost economies of operation in every phase of the business, to recognize that the development of new sources of crude for a considerable time promises to be hurtful, and to more nearly bring about an equilibrium between production and consumption by means which will inflict the minimum of injury or loss to any unit. There are complexities in the present outlook which are new, but there are also compensating opportunities for greater efficiency and the ultimate prosperity of the industry, which are only now being recognized.

OKLAHOMA FIELDS

(Continued from Page 144)

bbls. from the Wilcox sand at 4,048-94 feet. Sinclair Oil & Gas Co.'s No. 3 S. Harjo, SW cor. SE SE Section 14-8-6, produced 6,865 bbls. the first 24 hours from the Wilcox sand at 4,360-4,367 feet. Indian Territory Illuminating Oil Co.'s No. 4 Goforth, SW cor. SE NE Section 15-8-6, was completed for 4,589 bbls. in the Wilcox sand at 4,106-23 feet. No. 1 Walker, NW cor. NE SE Section 15-8-6, drilled the Wilcox sand from 4,111 feet to 4,134 feet and made 3,459 bbls. when shot with 20 quarts. No. 2 Youngblood, NE cor. NW NW Section 24-8-6, produced 5,197 bbls. from the Wilcox sand at 4,334-36 feet. Carter Oil Co.'s No. 2 Wise, NW cor. NE NE Section 23-8-6, had top of the Wilcox sand at 4,246 feet, drilled to 4,252 feet and flowed 6,030 bbls.

Magnolia Petroleum Co.'s No. 2 Norvell, NE cor. SE SW Section 14-8-7, which had the rig up, has been abandoned. Carter Oil Co.'s No. 9 Casey, NE cor. SE NE Section 31-8-8, Wewoka Pool, is producing 900 bbls. from the Hunton lime at 3,918-4,005 feet and the Wilcox sand at 4,130-4,137 feet. Independent Oil & Gas Co. and Continental Oil Co.'s No. 4 W. J. Long, NW cor. SE Section 32-8-8, is swabbing 67 bbls. from the Wilcox sand at 4,198-4,203 feet. Magnolia Petroleum Co.'s No. 4 Bagwell, NE cor. SW NW Section 32-8-8, flowed 5,133 bbls. the first 24 hours from the Hunton lime at 3,902-75 feet. Producers & Refiners Corp.'s No. 14 Amos "A," NE cor. NE SE Section 31-8-8, had Wilcox sand at 4,161-65 feet, was plugged back 2 feet and made 200 bbls. The Prairie Oil & Gas Co.'s No. 1 Baker, SW cor. NE, Section 24-9-5, made 405 bbls. from the Wilcox sand at 4,230-34 feet.

Grady County

Carter Oil Co. have the rig and tools out for No. 7 Walford, NE cor. SW SW Section 16-3n-5w, Carter-Knox Pool. The rig is being built for No. 8 Walford, SW cor. SE SW Section 16-3-5w. Amerada Petroleum Corp. and Gant have the rig up for No. 4 Hicks, NE cor. NW NE, Section 21-3-5w. Clark & Cowden's No. 3 Kerans, SE cor. SW NE, Section 21-3-5w, is rigging up rotary. The Prairie Oil & Gas Co. is putting up the rig for No. 4 Dryden, SE cor. NE, Section 3-4-8w.

Hall & Briscoe's No. 1 Dryden, C NE SE Section 35-5-8w, was completed for 41,000,000 feet of gas in sand at 2,198-2,403 feet. Magnolia Petroleum Co.'s No. 3 Pendley, CNL S half SE NW Section 14-4-8w, is making 16,000,000 feet of gas from sand at 2,485-95 feet. Carter Oil Co.'s No. 1 E. Herans, NE cor. SW SE Section, was abandoned at 3,056 feet. Joe Anderson's No. 1-A Wilde, NE cor. SE SE Section 28-3-5w, was abandoned at 1,811 feet.

Beckham County

Magnolia Petroleum Co.'s No. 1 Beagle, SW cor. NW NW Section 28-9-23w, has been completed for 68,000,000 feet of gas in sandy lime at 2,670-2,702 feet.

Comanche County

Abernathy and others' No. 1 Indian, C SW NW Section 23-5-11w, is dry and abandoned at 2,508 feet.

Stephens County

Winkler & McQueen made location for No. 1 Enscore, SE cor. Section 24-1s-4w. Magnolia Petroleum Co. has the rig up for No. 14 D. Russell, SE cor. NE SE Section 25-1s-9w. Winkler and others have a rig up to deepen No. 3 Nelson, SE cor. SW NE Section 28-1s-8w. The old depth is 2,168 feet.

George Pace's No. 1 W. Payne, NW cor. NE Section 18-1-5w, has been abandoned at 2,187 feet. F. W. Merrick's No. 1 Underwood, NE cor. SE Section 13-1s-4w, made 2,800 bbls. the first 24 hours from broken sand at 2,536-2,800 feet. Skelly Oil Co.'s No. 3 Krebs, SE cor. NE SE Section 13-1s-4w, is flowing and swabbing 230 bbls. from sands at 2,564-2,860 feet.

Jefferson County

Danciger Oil Co. has the rig up for No. 1 Dilly, SE cor. NW Section 11-5s-7w.

Gypsy Oil Co.'s No. 1 Spain, SE cor. NE NW Section 26-7s-6w, has been abandoned at 4,112 feet.

Tillman County

P. C. Dean and others' No. 1 Hollopath, NE cor. Section 6-5s-14w, is dry and abandoned at 2,007 feet.

Tulsa County

Regal Oil & Gas Co.'s No. 3 S. Bell, SE cor. NE SW Section 5-19-11, an old well, is being cleaned out preparatory to deepening. P. Short's No. 1 Townsite, Lot 10, Block 8, SW cor. Section 32-19-12, is making 4,000,000 feet of gas from the Wilcox sand at 2,076-80 feet.

Wagoner County

F. E. Webb and others have a machine at the location for No. 4 F. Barnett, NW cor. Section 9-18-16. Price & Williams' No. 1 Samuels, SW cor. Section 32-17-17, is drilling at 200 feet. G. S. Wilson's No. 1 Lunnon, NW cor. NE NW Section 14-16-16, an old well being deepened, is drilling at 900 feet.

Cartwright & Kyle's No. 3 Davis, C NE NW Section 2-18-15, is dry and abandoned at 1,342 feet. F. E. Webb and others' No. 1 Grayson, CNL NE NW Section 4-18-16, is a dry hole at 1,173 feet. Bryan & Emery's No. 2 Bright, NW cor. SE NW Section 26-17-16, has been abandoned at 858 feet. J. E. Thompson's No. 1 Ware, NE cor. NW NW Section 12-17-17, has been abandoned at 235 feet. F. E. Webb and others' No. 4 Asbury, SE cor. SW NE Section 20-16-15, is a 15-bbl. well in sand at 1,356-70 feet. M. E. Johnson's No. 2 Lunnon, NW cor. Section 14-16-16, is dry at 1,682 feet. Mitchell Oil Co.'s No. 1 Grayson, NW cor. NE Section 14-16-16, was completed for 2,000,000 feet of gas in sand at 1,580-90 feet.

DEATH OF MRS. ANNA MOUNT

Mrs. Anna Mount died at the family home in Oil City, Pa., April 25. Mrs. Mount was 69 years old and had lived in Oil City practically all her life. She was very well known in Tulsa, Okla., as she had visited her son and his wife several times at 1448 South Carson. She is survived by two children, Dr. Winnie K. Mount of Oil City, Pa., and Walter M. Mount, president of the Mount Cooper Iron Works, Tulsa, Okla. Mr. and Mrs. Mount were with her when she died.

NEW OIL FIRE EXTINGUISHER

Perfection of a devise for extinguishing oil fires is the claim of D. F. Volkoff, technical director of the Soviet Department for the control of Oil Properties, known as the Naphtha Syndicate. Experimentally 72,000 pounds of naphtha were spread over an area of 320 square yards and ignited. The flames are said to have been quenched in six minutes.

a popular valve for gas service

IN the DRIPS on high pressure lines this particular Homestead Valve is in great favor. Several gas companies like it especially and use it continually for such service. It will outlast the pipe line on which installed and will indefinitely maintain its original perfect functioning. With this valve, blow-offs are made quickly and satisfactorily.

It is furnished in sizes ⅛ to 6 inches, screwed or flanged. Suitable for 500 pounds working pressure.

Lasting and satisfactory service has resulted in the adoption of this valve as standard by several large pipe line companies.

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High Pressure—High Temperature—Acid Resistant—Boiler and Blow-Off—Pumping Station—Still—Tar Lines—Gas Drips.

Homestead Valve Manufacturing Company, Homestead, Pa

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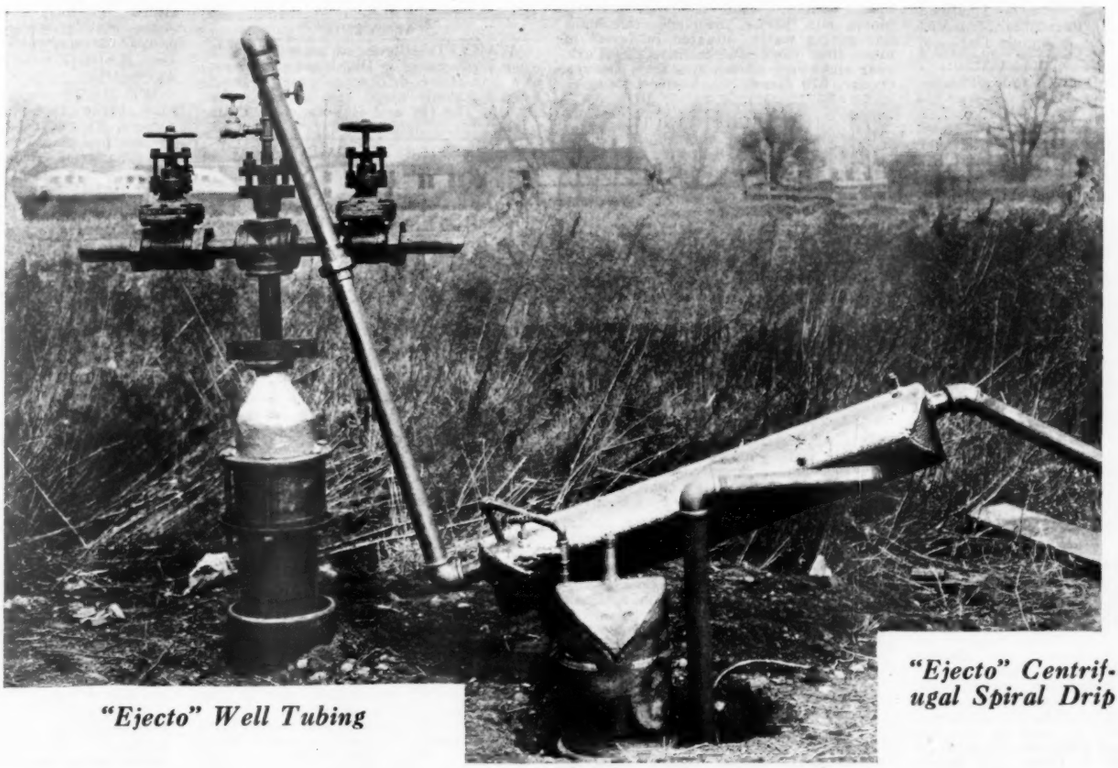
PRODUCTS:—*Quarter Turn Valves—Straight-Way Three-Way Four-Way Types—Full Round-Way Valves—Cast Steel Refinery Valves—Lubricated Valves—Hovalco Blow-Off Valves—Protected Seat Globe Valves B & O Pat.—Protected-Seat Hydraulic Operating Valves*



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MAIL your advertisement now. It will be published next week. Cash with order.

EQUIPMENT WANTED

I WANT to buy a second-hand oil engine and generator for electric light plant, wire and meters; 25 HP to 40 HP; please state price, when writing. J. R. Jones, Gordonville, Texas.

FOR SALE—EQUIPMENT

FOR SALE—SURPLUS EQUIPMENT

String cable tools, 3—75 HP G.E. drilling motors complete; 8, 10-25 HP G.E. pumping motors; 1, 84 ft. International Steel Drilling Derrick; 8 complete sets 6 in. rig irons; 3 L. C. Moore calf wheel outfits. Priced to move. Condition first class. Write Iowa Petroleum Co., Putnam Bldg., Davenport, Iowa.

AIR COMPRESSOR FOR SALE

Direct motor driven Ingersoll-Rand air compressor, complete with 10 horsepower 220 volt, 3 phase, 60 cycle motor. This is a self-contained unit, mounted on one base and suitable for furnishing air for riveting hammer or similar tools. Machine is brand new and very latest model.

OZARK CHEMICAL COMPANY
Ritz Bldg. Tulsa, Okla.

FOR SALE—Used casing. 900 ft. 12½ in. 50 lb. 1,400 ft. 10 in. 40 lb. In good shape. W. E. Huffine, Yale, Okla. Call DA-15 or 440 W. 29th, Okla. City. 4-2328.

FOR SALE—300 Horse Power Natural Gas Rathbun-Jones, 3 cylinder Gas Engine. Direct connected to G. E. 170 K.W., 240 volt A.C. Generator with rheostat. Also 250 Horse Power Gas Producer. First class condition.

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Cleveland, Ohio

FOR SALE: 6—150 h.p. Boilers 6'x18' in good condition.
1—70 h.p. Bruce-McBeth Gas Engine.
1—5-ton Monarch Caterpillar Tractor.
Ajax Generator & Supply Co.
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FOR SALE—5 Deane Triplex Pumps 5 by 8.
1 No. 2, 1 No. 5, 1 No. 6, 1 No. 7, 1 No. 10, 1 No. 11 Sweetland Oil Filters.
Two 10-inch S. Roturbo Centrifugal Pumps. Six 10-inch S. Centrifugal Pumps. Steam Turbine.
Storage Tanks, all sizes. Send for list.
Send us your inquiries. We buy your surplus equipment.
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USED LINE PIPE AND CASING FOR SALE
7—25-h.p. used gas engines.
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15,000 ft. 5¾-in. used casing.
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75,000 ft. 3-in. used line pipe.
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20,000 ft. 6-in. used line pipe.
For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
607 Holmes Bldg.,
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STANDARD RIG FOR SALE

New 120-foot standard rig, complete; has just drilled one well; good 6-inch Marion rig irons; set Marion iron bull wheels; set Lucy calf wheels; 65 H. P. Lucy boiler; new style Ajax engine complete; O. W. S. engine; two 250-bbl. steel tanks; underreamers; elevators, gas burners; belts; casing line; crown block; casing clamps and considerable other drilling equipment; all in first-class condition; practically as good as new and offered at a great discount. Write R. S. Randerson or H. L. Berry, 318 Braniff Building, Oklahoma City, Okla. Telephone Maple 0778.

SIX-INCH Lucy Special Rotary complete, nearly new; 2,300 feet 4-inch drill stem; lot of bits, extra rotary parts, etc. $4,000. 218 feet new 20-inch casing. $900. S. H. Weber, 310 Colo., Bldg, Denver, Colo.

FOR SALE—EQUIPMENT

FOR SALE—Two new four-room sectional houses; 25 per cent discount for quick sale. Foster, 115 South Boston, Tulsa, Okla. Phone 3-1581.

FOR SALE—Cheap, one 4-cylinder St. Mary's Diesel Oil Engine; total rated horsepower 152½. Arch Rollow, Wynnewood, Okla.

MANUFACTURING MACHINISTS

CRAGO CUT GEARS
Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

MACHINE WORK — Foundry products; let us figure on the manufacture of your equipment. First-class service. Reasonable prices. Prompt deliveries. Large establishment.
GENERAL ENGINEERING & MFG. CO.
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BUSINESS OPPORTUNITY

MACHINE SHOP
Want location for first class machine shop in oil fields, anywhere. Have all necessary machinery including large pipe machine. Write Ohio Business Brokers, St Marys, Ohio.

VENEZUELA — Manufacturers and jobbers of oil field equipment and supplies will be pleased to learn of the organization of the "Maracaibo Specialty Company" which has been organized for the purpose of doing preliminary advertising, reporting drilling activities, and acting as representative for manufacturers of equipment, who wish their products placed on the market in Venezuela. Commission basis or salary. Maracaibo Specialty Co., 705 Second National Bank Building, Houston, Texas. Phone Preston 0633.

FOR SALE or rent, Elegantly furnished cabin, large sleeping porches, piano, sun parlor, fireplace, telephone. fine spring water, situated in forest of pines, over wonderful roads; Cody Park, near clubhouse, 45 minutes from Denver. Owner, 670 Grant St., Denver, Colo.

$4.00 PER ACRE
11,000 ACRE RANCH
Make Ideal Fishing-Hunting Preserve.
On Eleven Points River, Oregon County, Mo. 250 acres cultivated. Four sets buildings. Heavy woven wire fence. Fine cattle, sheep and hog range. Well watered. One day shipment St. Louis Markets.
J. RICHARD BROOKS,
Alton, Mo.

WANTED—Organization or individual with wide acquaintance and following in oil fields as exclusive representative for established company manufacturing product sold to oil companies, producers and drillers. Opportunity offers unusual earnings with steady repeat sales. Applicants with some mechanical knowledge preferable. Address with full information Box B-832, The Oil and Gas Journal, Tulsa, Okla.

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

HAVE YOU a rig to rent for acreage, or will you drill a wildcat block of acreage in southwest Texas? If you will, I have what you want, with good geology and well located. Address W. S. Poole, Beeville, Tex.

SPANISH-ENGLISH TRANSLATIONS
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400-ACRE FARM
One-third cleared, rich, productive. Some good timber. Make wonderful stock farm or gentlemen's game preserve. Seventy-five miles St. Louis, night's run Chicago. Frisco and Illinois Central through property. Worth many times in few years. Aged owner settling affairs, therefore hardly any cash required, 10 years to pay balance. Iowen, Box 116, Mt. Vernon, Ill.

BUSINESS OPPORTUNITY

I AM organizing, syndicate to drill test well in Okmulgee county; unusual opportunity. For particulars address James L. Powell, 614 Barnes Bldg., Muskogee, Okla.

HUMBLE WELL in new field, Cherokee County, Texas, at six feet in the sand making thirty-eight hundred barrels through quarter inch choke; this well drilled in would probably make twenty thousand barrels. We have fifteen hundred acres on next dome six miles west; want small bonus and well. H. F. Goss, First Natl. Bldg., Chickasha, Okla. P. O. Box 572.

PLAY SAFE
For Sale—The controlling interest in a successful Furniture Business, doing over $100,000 net yearly. Located in a beautiful Mid-West Metropolitan city, close to one-half million population. This store is over 25 years old and the business has a good personell and is well organized, so that knowing this business thoroughly would not be so essential. A wonderful opportunity for a man with 75 to 100 thousand to make a safe investment with a sure profit. This will bear the strictest investigation. Write to BOX B-813
The Oil and Gas Journal. Tulsa, Okla.

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Income and Estate Tax Service
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Amarillo, Texas.

WANTED

WANTED—Blocks of acreage for future development in Oklahoma and Texas. No immediate drilling contracts considered. Submit maps and geology. Box B-833, The Oil and Gas Journal, Tulsa, Okla.

ROYALTIES WANTED—Producing, offset or under drilling wells. Give description, price, age and full particulars. Box 1359, Tulsa, Okla.

SHALLOW settled production wanted. Will pay cash for shallow settled production where more drilling can be done. C. E. Gunhus, New Grand Hotel, Billings, Mont.

LIMITED issue stock, new company, prominent Amarillo men, 2,050 acres leases best proven production Texas Panhandle. High grade investment. Opportunity for investors and agents. Write or Wire; E. A. Peek, Smith Bldg., Amarillo, Tex.

WANTED—Shallow structure in Mid-Continent Field; large acreage; without bonus; for drilling test. Geological report and map necessary. Send details. Shallow Sands Oil Producers Syndicate, 404 Empire Bldg., Denver, Colo.

WANTED—WET GAS CONTRACTS
Gasoline producer will give interest in plant or overriding royalty. Give volume and gasoline content. Wm. H. Allen, contract dept., 1215 Detwiler Bldg., Los Angeles, Calif.

ROYALTIES WANTED—Producing-offset, and under drilling wells; also producing properties and leases. J. Ben Brown, 115 North Vancouver St., Tulsa.

NATURAL GASOLINE
WE WANT wet natural gas on royalty or partnership basis.
WE HAVE complete equipment for a 5,000-10,000-gal. natural gasoline plant.
Write BOX B-820
The Oil and Gas Journal, Tulsa, Okla.

WANTED—Leases, royalties and production to sell. Waltman, Barnsdall, Ok.

DRILLER WANTED to drill well 3,500 ft. or deeper in Sec. 1, Twp. 3n, R. 5w in Grady County, Okla. State cost, condition and time required. J. Mazur, 1831 Evergreen, Ave., Chicago, Ill.

WANTED

WANTED

Capital to complete well now down 1,735 feet, Yuma, Arizona. Wonderful showing. Leases on 7,000 acres. No. 5 rotary rig on ground. One-half interest to party financing to 3,000 feet if necessary. Shallow water well close by produced 50 barrels oil. Wonderful gamble.

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221 Commonwealth Bldg.
San Diego, Calif.

WANT real bargains in producing royalties in Okla. Plenty money. Richard Hill, 813 E. Haskell, Tulsa, Okla.

POSITION WANTED

CIVIL ENGR. 5 years experience in farm and pipe line surveys, large tank grades, inventory work, etc. Desires position with producer or pipe line company. Go anywhere. Best references. Box B-810, The Oil and Gas Journal, Tulsa, Okla.

WE HAVE available a man who can take charge of your meter and regulator repairs. This man is a thorough mechanic; has had charge of our provers, service department and meter assembly. It has been our practice for some time to train men for the gas companies, and this man is ready to save some gas company a lot of money on their repair and maintenance costs. For further information address Mr. L. A. Dixon, Pittsburgh Equitable Meter Co., 400 Lexington Avenue, Pittsburgh, Pa.

REFINERY accountant, age 30, 12 years' experience in refining; formerly superintendent of skimming plant; for the last five years in direct charge all refinery accounting for large corporation. Box B-815, The Oil and Gas Journal, Tulsa, Okla.

TRAFFIC MANAGER — 8 years refinery sales and traffic experience, Mid-Continent field. Open for position May 15th. A-1 reference. Box B-830, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

WANTED — Refinery office man for small plant. Must be able to figure yields and costs, do typing and plant accounting. Give references and state salary. Box B-836, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Refinery Construction and maintenance engineer. Prefer man who is familiar with Dubbs Construction. Salary to start $210 per month. Please furnish references. Box B-834, The Oil and Gas Journal, Tulsa, Okla.

AMERICAN ENGINEERS Service, Pittsburgh, Pa., requires for employment proposals. Graduate Mechanical Engineers; Steam and Chemical maintenance engineers; Designing Draftsmen; Piping; Structures; Power equipment; Chemist; Testers; Accountants; Civil Engineers and Oil Geologists. Free to employers.

WANTED—Pipe salesman. A man who is familiar with merchants, pipe, line pipe and casing. Box B-822, The Oil and Gas Journal, Tulsa, Okla.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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ROYALTIES—PRODUCTION

CONTROL offset royalty to 3,500-bbl. producer, 2 wells on sand, also own producing oil and gas royalties in Oklahoma fields. Only real purchasers wanted. P. O. Box 825, Tulsa, Okla.

FOR SALE—Oil royalty on 320 acres land, four miles north Phillips discovery well in Jones County. Also lease and royalty on 300 acres in Smith County, close to Steen Saline, where the Gulf people have large holdings. T. L. Odom, Tyler, Tex.

WILL BUY producing royalties and close-in non-producing royalties from owners giving full details and right price. P. O. Box 1440, Tulsa, Okla.

J. F. MARION OIL COMPANY
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Buys and sells Texas Oil Leases and Royalties.

PECOS COUNTY ROYALTY—Sec. 49, Blk. 11, H. & G. N. Ry Co., 618 acres, 2 miles west of where Orient Ry. crosses Pecos River; lease owned by The California Co.; will sell 1/64th for $1 acre; reasonable terms. Owner, L. W. Stieren, 815 Alamo Bank Bldg., San Antonio, Tex.

ROYALTY for sale; the lease rental alone will net 6 to 11 per cent. Can you beat that? Murray Sells, Muskogee, Okla.

LEASES—PRODUCTION

160 ACRE Oil Lease on formation $1,600. Will take $1,000 interest in drilling. 520 Broadway, Joplin, Mo.

The undersigned will offer for sale, 80 acres of oil land, not leased, in the Southeast of 7-24 North Range, West in Noble County, Okla., for one hundred and twenty five an acre. Address of owner. A. J Sauer, Box 566, Lancaster, Calif.

FOR SALE — Selected oil and gas leases adjoining producing and drilling leases in Barren County, Kentucky. Prices right. L. W. Preston, Glasgow, Ky.

HUMBLE OIL CO. WELL in Cherokee County Texas came in approximately ten thousand barrels high grade oil per day. We find ourselves with one thousand acres leased near this well on very top of same structure; we feel certain of ten thousand barrel well. We need finance to drill the first well on this one thousand acres. We can offer a fine deal to high class broker or individual who might be interested in selling interests in whole thousand acres and well to be drilled, to clients for funds to drill the first well. We are busy drilling wells and do not have time to raise these funds but we do not believe a better opportunity is offered in America today to make big money. The property and ourselves will stand the acid test; we operate on highest business standards and will furnish every reference required as to our honor, integrity and ability. Remember parties investing in this property receive an interest in the whole thousand acres and all the oil ever produced on same. Write or wire us for complete information.
GRAHAM DEVELOPMENT CO.
First Natl. Bldg., Chickasha, Okla.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars or request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

HAVE TAKEN OVER OTHER BUSINESS
Must let go all my leases 10,000 acre block Roosevelt County, N. M. 1,000 acres Quay County. Other smaller leases. All leases Major Co's. surround.
C. L. FETTY
Box 786, Phoenix, Ariz.

25,000 ACRES goes to highest bidder on acreage for well or cash, A-1 geology, conveniences, Pottawatomie County, Kansas. Roy Shaw, 411 Leavenworth, Manhattan, Kans.

LEASES—PRODUCTION

FLORIDA has about 30 oil wells drilling at this time. Desirable acreage already hard to secure We control large block near several drilling wells. This is the time to investigate. Don't say there is no oil unless you know. Box B-835, The Oil and Gas Journal, Tulsa, Okla.

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Southeastern New Mexico and west Texas counties—Lea, Eddy, Chaves, Gaines, Andrews, Winkler, Loving, Ward, Culberson and Pecos Counties, oil and gas leases, royalties and drilling blocks. We buy and sell. F. S. Blackmar. P. O. Box 541. Roswell, N. Mex.

FOR SALE—Five thousand acres of land blocked. Smith & Shadle, Boonsville, Texas.

ATTENTION
LAND AND LEASE OWNERS
Will consider wildcat drilling block of ten thousand acres or more for a test well.
In submitting acreage for consideration, same must be accompanied by contour map, geological report or geological map.
Block of acreage to receive consideration must be as nearly solid as possible, must have some geology and may be located in Texas, Oklahoma, South Central Kansas or Eastern Central New Mexico.
J. W. ALFORD & CO.
Lincoln Bldg.
Los Angeles, Calif.

DRILLING BLOCK secured on approved acreage and well supervised; no bonus; we keep some acreage as fee. Nicolle, Petroleum Geologists and Operators. Box 1720, Fort Worth, Tex.

OMER MCKOWN AND SON
Maud, Oklahoma
Buy, sell and broker leases and royalty southeast Seminole and south Pottawatomie Counties, Okla.

PROVEN LOCATIONS — Guarantee never fails, on oil or gas, wildcatting our specialty, depth and sands, for particulars, write Redmon & Bulk, 312 Cherokee, Humbodlt, Kans.

OIL IN FLORIDA?
640-acre drilling blocks available to responsible companies or individuals with tools ready to drill on the Ringling tract in Sarasota County in close proximity to Salt Springs and well No. 1 of the Associated Oil & Gas Co., now drilling. The geology has been favorably reported on by geologists and experienced oil men. For other information, write
KENNETH HAUER
Sarasota, Fla.

FOR SALE—$2 an acre; leases and half royalties in promising territory in Washita, Custer and Dewey counties. Address Box 173, Weatherford, Okla.

BEST GAS market in the country, 1,000 acres blocked out, proven field, shallow drilling, 35-cent market for gas. Will take royalty interest or cash, will stand closest investigation. Inquire of D. F. Troup, 719 Wick Avenue, Ashland, Ohio.

FOR LEASE—80 acres near Sunny Side, Idaho. It is claimed a large anticline comes through where this land is. Wm. Burger, 4761 Milentz Ave., St. Louis, Mo.

OPERATORS—Will block 5 yr. form 88 leases Montgomery County, Mississippi, 2 yrs. free, 25c rent next 3 yrs. at 5c acre. Brooks, 282 S. Front St., Memphis, Tenn.

STRUCK OIL!
Have some good bargains in farms and ranches in fee. Good leases in blocks from 4 to 12,000 acres each. Also good royalty. Offer 1,040 acres in Twp. 29n, R. 35e, New Mexico, 10-year lease and one-half royalty $2 per acre. Write or wire H. H. Errett, Clayton, N. Mex.

LEASES—PRODUCTION

FOR SALE—Over one hundred producing oil wells, well blocked, priced like junk, air proposition. P. O. Box 151, Humboldt, Kansas.

IF YOU have a large block of acreage on a good structure I will finance the drilling for part of acreage. C. E. Gunhus, New Grand Hotel, Billings, Mont.

NEW Oil Field, Ky. Shallow drilling, one well standing full of oil, one well now drilling. Five new well locations made. Will sell a few leases at $2, $3, and $5 per acre. P. O. Box 96, Bossier City, La.

OKLA. oil and gas lease, proven territory, production certain, if interested write for terms. Anton Koch, Henryetta, Okla.

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas.

LOUISIANA INTERIOR
SALT DOMES
Oil and Gas leases on Prothro Dome, Bienville Parish, Louisiana. Complete protection. Address,
401 RICOU BREWSTER BLDG.,
Shreveport, La.

FOR SALE — Leases in proven gas area of Webster Parish, Louisiana. $20 per acre. Box B-831, The Oil and Gas Journal, Tulsa, Okla.

TO LEASE or sell—One-half interest in Section 30, Township 19, Range 13 West, in Union County. Edna Walbert, 758 Park Ave., Hot Springs, Ark.

ATTENTION oil men; Will sell 40 acres in fee, mineral right and all, not leased. Located three and half miles southeast of McCamey, Upton County. $4,000, all cash. Act quick if you want it. Box 217, Cisco, Texas.

THIS MAY INTEREST YOU
I am at the Claudia Apartment No. 17, 212 4th St., San Antonio, for a short period for the purpose of selling our three ranches in North Central Duval County, McMullen County and Zuvalla and Maverick Counties, Texas—a total of over 40,000 acres at prices and terms, etc., most inviting. While these are excellent livestock ranches some mixed farming is being done and eventually the greater part of this area will be operated agriculturally. Also as these ranches lie in the general trend of oil development, drilling is just starting under the supervision of responsible people.
Communications in care of above address will receive prompt attention.

SOUTHWEST TEXAS — WINKLER, Loving, Reeves, Ward, Pecos, Culberson Counties.
Drilling blocks. Leases. Royalties. Ranches in fee.
H. F. Anthony, Pecos, Tex.

AMARILLO PANHANDLE OIL FIELD
Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

OIL LEASES and royalties, Ector, Crane, Pecos, Reeves, Ward, Upton and Winkler Counties; buy or sell. C. H. C. Anderson, 712 Linz Bldg., Dallas, Tex.

OHIO COUNTY, KENTUCKY
Acreage for sale, close to producers and drilling wells. Best play in Kentucky.
G. Taylor Yewell, Owensboro, Ky.

FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

LEASES—PRODUCTION

SMALL producing leases for sale in Western Ky. R. E. Cope, Bowling Green, Ky.

FOR SALE—Oil leases in Cimarron, Texas, Beaver and Woods counties. Orbee Lease Co., 1114 Colcord Bldg., Oklahoma City, Okla.

LEASES, drilling blocks, royalties, West Texas for sale. W. W. Hines, Box 1303, Abilene, Tex.

I HAVE several hundred acres of oil and gas leases in McCurtain County, Oklahoma, running for 5 years, $1 per acre. P. T. Calahan, Idabel, Okla.

FOR SALE—DOGS

FOR SALE — Llewellyn and English setters, also rabbit hounds on trial, pamphlets free. O. K. Kennels, Marydel, Md.

FOR SALE — Beautiful grown male and female Boston Terriers. Female Pekingese, 4 months. All Pedigreed, reasonably priced. Honor Bright Kennels, Deerfield, Ill.

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Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
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PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

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Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

INCORPORATIONS

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

MONEY RAISING

RAISE CAPITAL!
Through sale of securities in your corporation. Worthy enterprises only. Twenty-five years experience. Highest references.
NORTHCLIFFE,
25 West Forty-Third, New York.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 131 E. 13th, Oklahoma City, Okla.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	$1.05	$1.80	$2.55	$3.30
4 lines	1.40	2.40	3.40	4.40
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6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
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Chicago Market Shows Little Change

Very Substantial Gains in Consumption Not Reflected in Spot Market. Low Quotations From Southern Plants

By J. B. Waldo

CHICAGO, May 2.—Although some of the distributing companies with local headquarters report very substantial gains in their sales of gasoline over April compared with a year ago there is very little evidence in the spot market of this increased consumption. The spot market opened quietly on Monday morning at practically the same range of prices as that at the close of last week. Some refiners were actually holding for and selling at 6½ cents; others would meet competition as low as 6¼ cents while there was plenty of U. S. Motor gasoline offered both by local marketers and group refiners at 6¼ cents to dealers. A little transit gasoline was offered at 6⅛ cents without attracting much attention from buyers.

There was some inquiry for prices over May and marketers reported they could buy at 6¼ cents but were not inclined to do much at that price. This leaves the U. S. Motors market with a range of 6¼ to 6½ cents both for spot and over part or all of May. There is only a limited demand for gravity and the higher tests are selling well today in comparison with the regular motor grade.

Range of Prices

Kerosene is selling fairly well but this market is rather easy although sales are being made to close buyers at 4¼ cents but this price is shaded by some refiners. Both gasoline and kerosene are being sold from southern plants for delivery to differential points today at prices much less than these products could be delivered at these points from Group 3. These low prices for deliveries to Ohio and Michigan points restrict the sale from the Group.

The market for both gas oil and fuel oil is slow but there is a conitnued showing of strength in gas oil that is absent in the fuel oil.

The weather here was very favorable over Sunday but was followed by rain which is reported from over much of the territory today.

Ordering on Contracts

The best feature of the Chicago gasoline market for the past week was the way in which dealers with marginal contracts are taking the full amount of gasoline called for by their agreement. There seems to be almost no hesitation in ordering out the full quantity of gasoline on the part of most of the distributors in this territory. Here and there some delay is asked and also occasionally the dealer will ask for a car or two above the amount of his contract for the month. But these dealers are securing their gasoline requirements on marginal contracts and are not obliged to buy more. Some estimate that fully 90 per cent of the distributors in this territory have contracts for their motor fuel which call for monthly deliveries to their average requirements. This estimate is very likely to be extreme but the percentage of total distributors who are not liable to be in the gasoline market for supplies except during such periods of the year as their business is at its height is a large one. This leaves the spot market only the place of purchase for a limited number of oil dealers and while some of these are very large concerns and have a great gallonage still the market is not what it used to be a few years ago. Nearly every refiner and marketer of any consequence has a few marginal contracts, enough if possible to make at least a foundation for a larger business to be done.

During last week the demand was light and the market quiet. Bad roads accounted for some of the quietness, price uncertainties were also an active factor in inclining dealers to hold back their orders. Once in a while some seller would report a good day for the season of the year, but with all of the local trade for much of the week just closed there was little doing. The great hope is that with the present month there will come a decided improvement in the demand and a better market generally. Last year the good season with refiners and distributors alike began with May. Warm suns and drying winds are needed and they are more to be relied upon during May than during April, the month of showers. The demand continues to be very largely for the U. S. Motor grade with some call for the higher gravities, 60-62 with either the 400 or the 437 endpoint and 64-66 with the 375 or 390 endpoint. The 60-62 437, or "Sixty-Navy," as they term it in the trade, has become more of a favored product and is a good seller not only in Wisconsin where it meets the requirements of the law but in other states as well. The super gasolines or special antiknock products are still receiving a good deal of attention from dealers but the trend right now seems to be away from the antiknock qualities and towards the more volatile products with or without alleged value as a diminisher of the preignition knock. What is wanted is a better grade irrespective of what may be claimed for it as an antiknock motor fuel.

Price Tendency

The price tendency during last week was towards a slightly lower level. At the start of the week, the range was still maintained of 6¼ to 6½ cents for U. S. Motor gasoline with a fair number of sales made at the higher price but as the week progressed with no increase in the buying and concessions here and there made the most of by the alert buyer, the range was restricted to 6¼ to 6⅜ cents and finally the only real quotation was 6¼ cents. This change was traceable to lack of business, a feeling that the crude and tank wagon prices would have to be reduced very soon, the insistence of buyers on lower prices if business was wanted, backed up by statements that they had been offered gasoline at a price less than the market and the general desire of the oil industry for action of some sort. Other causes might have contributed, among them the short selling of some concerns. There was almost an organized assault on refinery prices by dealers both country and city. A large number of the country distributors seemed to want a 6-cent price. It is a very fair statement that if the refinery market should decline to that price, the next morning there would be an equally strong effort made to bring down prices to a 5¾-cent level. Just because a refiner does not get the order he is quoting on is no indication that it was placed at a lower price than that of the bidder. A buyer may send out his inquiry for 10 cars and receive a dozen offers of which easily one-half will be identical as to price, and that the lowest. Five disappointed bidders will assume that the price at which the order was placed was less than theirs and report that so and so bought the cars at a price less than say 6¼ cents for that was the price quoted. One of the factors in the situation has been the widening of the spread between the tank wagon price and the refinery market during the week. In other territories, the Atlantic Refining Co., for example, in Ohio has quoted a price of 8 cents out of Franklin or Pittsburgh which makes a cost laid down in many parts of Ohio less than 5½ cents, Group 3.

Strong Undertone

Yet there are good oil men who are close observers of the market who believe that there is a strong undertone, very largely on account of the way that the market has resisted the efforts to drive prices downward and partly on account of the approach of the season of more active consumption. There is one thing and that is that no merchandising market can remain stationary for a long while. There is a strong necessity for action, for business, for sales and if the market can resist the forces seeking for lower prices long enough there will be a change in favor of higher prices. If the constant excess of crude can be stored as crude and kept from coming on the market as gasoline the demand will in a short time begin to overtake the supply. It is not necessary that the supply be greatly drawn on, only that the demand indicate its ability to care for the output, a condition that will be greatly helped by any reduction in the refinery production.

Kerosene Easy

The kerosene market has been quiet and prices easy. The tractor demand is light and the season growing late. Of course, the fact that farmers over a large part of the territory have been interrupted in their spring work through heavy rains and wet fields may bring a big rush for tractor fuel for a short time but the market is liable to be held down by the price of gasoline. Some sales to the trade of 41-43 water white kerosene have been made at 4⅛ cents and it has been bought for resale at 3⅞ cents and possibly at less. There is some distillate being sold as tractor fuel and some blendings of distillate with gasoline to get a quick starting fuel. After May the tractor demand is light until July when the early grains are harvested and then late in the fall.

Furnace Oils Quiet

Furnace oils of all kinds are quiet. There is an occasional sale but no real business. There is a good deal of inquiry regarding supplies for next season and contracts could be closed right now if on the buyers idea. It is very evident now that gas oil of the proper specifications will be a favored fuel next fall. The newer burners use it successfully and it is displacing distillate with many dealers. In fact a recent suggested price list of the Chicago burning oil dealers does not quote a quality above a 32 36 light gas oil. The suggestd price for this in deliveries of 400 gallons is 7½ cents but, of course, this price list is for the summer demand only which includes no domestic oil burners. The outlook, according to well-posted oil burner men, is that the next season will show a larger number of oil burners in use than last year by an important increase. They feel that they have established the position of the domestic oil burner as a superior means of home heating and that with great financial strength and many improvements in the standard makes they will have a very good season.

Fuel Oil Unchanged

The demand for fuel oil in the Chicago market shows no improvement. On the contrary, the demand is, if there has been any change, a little less active. The business continues to come in for a few cars or for brief periods and while there are some inquiries they seem to be more for the purpose of feeling out the market than with any definite thought of really placing an order for a long period or for a larger quantity of oil. Very occasionally one hears of a transaction that is really worth while but these are the exceptions, not the rule, and the prices obtained are very low. There has been a great deal of anticipating lower prices and of late the concerns quoting the lowest prices have not only secured the business but have made good money in many cases owing to the decline in prices at the refineries. There seems to be several factors working for lower prices right now, among them the threat that is felt to come from the heavy production in the Mid-Continent and California fields, the failure of the coal strike to have any material influence on the demand, some slowing up in the industrial situation and the lessened consumption that is to be expected at this time of the year. Little oil is being burned for heating right now while a year ago the demand from this source was even larger than during the first three months of the year.

There has been quite an easing off in fuel oil prices during the past two weeks and judging by the quotation made to possible buyers, dealers rather expect that this easier feeling will continue. The outlook is for a restricted demand and the buyers insist that the supply is bound to increase with a further reduction in crude prices which they regard as sure to come in the near future owing to the starting of the skimming plants which must have a large proportion of their daily runs to sell as fuel oil. This is one of the reasons why the fuel oil market is so deadly quiet. There is very little stability to prices. Some of the sellers are willing to take pretty nearly any price that the buyer will offer and trust to be able to cover, due in a great part to the difficulty of securing any real business at all. Actual quotations made on fuel oil range from 90 cents for a 16-18 grade to $1 for 28-30 product. Smackover holds at $1.15 to 1.17½ owing to the steady demand and the limited offerings but some Smackover oil said by some to be not strictly fuel oil but containing many impurities has been offered at a little less but this market is holding fairly firm.

Gas Oil Stronger

Gas oil is evidencing a little more strength right now but the strength is at the refinery, not in the market and selling at higher prices is hard and only possible in small lots. The utility companies are buying for their needs and for a little more in some cases at 2½ cents for U. G. I. specification oil but they simply refuse to consider a higher price. In fact some sales have been made not of very large qualities at 2⅜ cents to gas companies. Some buyers have evidenced willingness to store a little oil or possibly a considerable quantity at that price but if these orders have been placed they have gone to the refiners direct and possibly at a shade lower than 2½ cents for this grade. Some industries talked of filling their tanks but they are slow to move and when asked to pay 2⅝ cents they simply decline to buy. In fact the suggestion of any advances in prices stops the placing of the order. Several of the larger distributors have stated they might buy oil for a tank to carry over but what they want is the cracked low flash and cold test gas oil and this is not freely offered.

Some of the Louisiana plants and those in north Texas have stated that they would store their gas oil which is in line with the practice at this time of the year to accumulate oil for the demand from southern points and particularly the rice planters and all who use gas oil in their irrigation operations. One company stated that it would hold its production of cracked gas oil for 3½ cents, take it

or leave it, this was its bottom price but other refiners in the same group were offering the same grade of oil at 2¾ cents freely, but all you want. The range of the market continues narrow wtih the heavy dark straightrun gasoline still obtainable by consumers who use this grade at 2½ cents and the cracked gas oil at 2¾ cents. Some of the strength shown in the product is attributed to car delays which may increase with the interruptions to the return of empties due to traffic conditions brought about by the floods in the South, especially if the early part of May develops a more active movement in gasoline.

Lub Movement

Lubricating oils show little if any change. Deliveries in drum lots and of canned stocks are in progress and compounders have been more active in ordering in additional cars of stocks of the various grades of refinery oils that they need to replenish their supplies. Some of the makers of high-grade lubricating oils for motor cars state that March was the best month that they ever had and that April will be equally as good. They believe that the persistent efforts of the makers of the higher grades of motor oils have had a result in increasing the demand for these oils from motorists. These refiners state that the crank cases are refilled more frequently and better oils are being used. The Standard Oil Co. of Indiana is reported to have made some large sales of lubricating oil stocks to other refiners outside its territory. All of the large Middle West refiners are pushing their lubricating oil sales by intensive selling and by meeting any price competition from the products of other sections of the country. There is nothing new in the industrial situation, there being a fair demand and very great rivalry for orders. Bright stocks are in limited supply, some producers stating that their sales this spring have exceeded those of any previous season. Neutrals are stated to be rather scarce in the Pennsylvania plants.

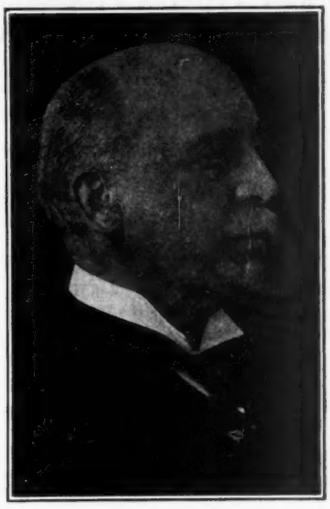
The statement was recently made by a large dealer in Ohio that the tank wagon price list meant nothing any more unless it was something from which to vary the amount of the cut. A good deal like using a sea level as a starting point from which to measure the height of the mountains. The difference is that there are few places that are reckoned as below the sea level while there are no prices for standard grade of gasoline that are above the tank wagon price. The station price in this city is 18 cents. A dozen or more motorists were asked what price they were paying for their gasoline at the drive-in stations or garages that they favored with their business and only one was paying 18 cents. Several paid 15 cents, the majority 16 cents. The cutting of the price seems to be very general. For example, the owner of a really good drive-in station in a country town was asked if he operated any trucks and replied that he did not for the other dealers in his town were sending their trucks out from 10 to 14 miles and allowing the farmers 3 cents a gallon off the tank wagon price for 100-gallon deliveries even on credit accounts the discount to be deducted when the bill was paid, presumably the first of the following month. He said there were 11 trucks delivering from his small town and he could not see how he could make any money. The head of a large oil company to whom this was repeated said that he was doing the same wherever they had to meet competition which was at most of their nearly 200 stations. The largest discount allowed under the Q. D. A. is 3 cents per gallon from the normal tank wagon price in quantities of 15,000 gallons bought during any one month, yet the country distributors and apparently the city station owners are allowing the purchaser of small quantities during the month a discount equal to the highest discount allowed under the Q. D. A. It is frequently said that the cutting of prices does not increase sales but at the same time it is argued that the lower the price of gasoline the greater the consumption. The argument of the price cutter may be that he is increasing the consumption by making the cost of motor car operation lower. Whatever the cause, reason or excuse, let it be termed what it will, there is a great deal of discounting of list prices, of rebating and the like and in the race of gallonage, the expenses pile up. In addition to the station attendants and the truck drivers most of the companies who seek the country and small town trade today employ salesmen to go out and get the business of customers. One such concern has put on 12 such salesmen since the first of the year. Asked if it paid the statement was made that it might but the expense involved was very heavy as they were not cheap men but it was also stated that it was necessary to hold their business. Which pays the best to put on salesmen to bring in the orders or to try and bring in the buyers by cutting prices? Which has the best result aside from the immediate return in profits on the business done as a result of these methods?

VISCOUNT COWDRAY, OIL PIONEER, DEAD

ABERDEEN, Scotland, May 1.—Viscount Cowdray, oil and industrial magnate of Great Britain and for a period during the World War chairman of the air board, died at his Scottish residence, Dunecht house, today, aged 71.

Better known to the business world as Weetman Dickinson Pearson, he was one of the world's greatest oil men. He and Edward L. Doheny were the pioneers in opening up the Mexican oil fields, about which Mexico's present international squabble turns.

He began his business life as a member of the family firm of S. Pearson & Son, contractors, and ultimately became the head of the organization, whose undertakings he greatly extended, especially in Mexico and South America, where large interests were acquired.



Viscount Cowdray

He was created a baronet in 1894, and raised to the peerage in 1910.

EASTERN TREND STILL DOWNWARD; MUCH DESTRUCTIVE COMPETITION

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Apr. 30.—Continued downward trend in refined oil prices has been the feature of the eastern refined oil market during the past week. The Standard Oil Co. of New York reduced the tankwagon price of kerosene 1 cent a gallon to 15 cents throughout its territory, embracing New York State and New England, effective Friday, while the Standard Oil Co. of New Jersey, effective April 26, reduced export gasoline and kerosene one-half cent to new low marks for the year.

The statement made in the "Lamp," published by the Standard Oil Co. of New Jersey, regarding the general oil outlook was not particularly encouraging, and many factors were inclined to look for still lower prices for gasoline, kerosene and fuel oil in the near future, as a pessimistic viewpoint on the part of both buyers and sellers is expected to restrict buying, and induce offerings at lower quotations.

There has been a marked increase in receipts of California gasoline Atlantic ports in the past few weeks. It is said California gasoline is being purchased by Atlantic Coast marketers at as low as 4¾ cents a gallon, f.o.b. San Pedro.

Offerings of U. S. Motor gasoline by Atlantic Coast refiners at as low as 8½ cents a gallon are also reported, although most refiners are selling at not less than 8¾ cents.

Several independent retailers have reduced the tankwagon gasoline market 2 cents in Boston, to 17 cents, but Standard Oil of New York, The Texas Company and the Gulf company have not followed yet. The actual market in most parts of the territory of the Standard Oil Co. of New York is 17 cents at present. The chief exceptions are New York City, Boston and some other of the large coastal cities. It is believed a general cut to 17 cents by Standard will be announced shortly.

That the gasoline price situation is largely nominal is indicated by the wide spread between markets in various localities. Retail prices at adjoining stations differ by as much as 3 cents a gallon. Tankwagon prices in the territory of the Standard Oil Co. of New York range from 15 cents in Rochester to 19 cents in New York City. At 15 cents, the tankwagon price shows a difference of about 10 cents from the Tulsa refinery price, which spread is regarded as probably excessive. The New York tank wagon price, 19 cents, is 14 cents higher than the Tulsa price.

A more natural differential exists between the present Tulsa price and the Bayonne refinery price for navy gasoline, amounting to a little over 4 cents. This differential corresponds closely to the cost of shipping by rail from Tulsa to Bayonne.

The differential between the Bayonne price and the tank wagon price, in the opinion of many eastern marketers, should not exceed 6 cents a gallon, but at 8¾ cents for Bayonne gasoline, this would indicate a logical tank wagon price of 14¾ cents, as against 15 to 19 cents (and an average of 17 cents) in the territory of the Standard Oil of New York and 16 cents in New Jersey.

The consumption of gasoline is holding up extremely well throughout the Atlantic seaboard, but this does not seem to be an important factor in the price in view of the destructive competition in progress.

One interesting feature of the retail gasoline situation on the Atlantic Coast is the recent appearance of many "Red Hat" stations, representing members of the National Petroleum Marketers Association. At some points "Red Hat" gasoline was being sold on a retail basis at 1 cent a gallon below rival stations. This is said to be the first year in which "Red Hat" gasoline has been widely marketed on the Atlantic seaboard.

Kerosene Lower

The general reduction in the kerosene market in New York and New England has already been noted. This is largely in sympathy with gasoline, but is partly the result of bitter competition at certain points.

Gas and Fuel Oil

The gas oil market is somewhat weak, the local price at refineries having been cut to 5¾ cents during the week.

Diesel oil was also reduced, the cut being 10 cents a barrel to a new low for the year of $2.30.

Bunker fuel oil remains firm at $1.75, but an early reduction is regarded as a possibility.

Exports Improve

The oil export trade at this port is holding up well. Bulk department has been stimulated by flood conditions in the lower Mississippi, which are said to be hindering exports of oil there somewhat. During the week ended April 27, bulk shipments of gasoline totaled 4,701,228 gallons, and of kerosene 1,823,934 gallons. One bulk oil cargo included 580,356 gallons of crude oil bound for Spain.

Shipments of lubricating oil during the past week fell off somewhat, but paraffin wax exports were fairly large, exceeding 1,000,000 pounds. Actual consignments were 463,540 pounds of refined wax and 606,100 pounds of crude scale.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
	Apr.27	Apr.20	Apr.13
Gasoline:			
Bulk	4,701,228	4,137,713	.....
Cases	474,360	970,050	2,562,990
Kerosene:			
Bulk	1,823,934	3,460,009	235,004
Cases	1,042,000	1,583,990	3,723,280
Lubricating Oil:			
Bulk	.....	2,273,460	2,396,830
Barrels	425,250	1,131,500	1,124,500
Cases	21,550	172,920	89,830
Lubricating Grease:			
Barrels (lbs.)	148,950	1,250,100	206,100
Paraffin Wax:			
Bags (lbs.)	463,540	1,160,720	2,516,140
Barrels (lbs.)	606,100	236,075	807,975
Petroleum Asphalt:			
Barrels (tons)	454	1,235	6,391
Petroleum Coke:			
Bags (tons)	.....	.....	6,278
Crude Oil:			
Bulk	580,356	.....	.....
Barrels	31,250	.....	.....

The foregoing figures include shipments of 500 bbls., 1,000 cases or over.

Oil Receipts

Estimated receipts of crude and refined oil at Atlantic Coast ports for the week ended April 27 totaled 3,590,000 bbls., a daily average of 513,000 bbls. This compares with 5,345,000 bbls., or 764,000 bbls. daily, the week ended April 20.

Receipts from the Pacific Coast for the week ended April 27 were heavy, totaling 825,000 bbls., a daily average of 118,000 bbls., while receipts from the Gulf fell off to 2,158,000 bbls., a daily average og 308,000 bbls.

Imports for the week ended April 27 amounted to 607,000 bbls., a daily average of 87,000 bbls., as against a total of 855,000 bbls., or 122,000 bbls., the week ended April 20.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
	Apr.27	Apr.20	Apr.13
Gulf Coast	308,000	490,000	394,000
Pacific Coast	118,000	152,000	75,000
Mexico	48,000	79,000	60,000
South America	39,000	43,000	55,000
Total	513,000	764,000	584,000

DAILY AVERAGES BY MONTHS

	Gulf	Pacific	Mexico	S.America	Total
March, 1927	345,000	103,000	36,000	81,000	565,000
February	379,000	89,000	40,000	48,000	556,000
January	362,000	73,000	49,000	61,000	545,000
December, 1926	363,000	57,000	49,000	61,000	530,000
November	335,000	62,000	56,000	40,000	493,000
October	270,000	71,000	61,000	43,000	445,000
September	299,000	98,000	63,000	58,000	518,000
August	320,000	67,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	26,000	523,000
April	326,000	92,000	126,000	20,000	564,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

Accounting in Refinery Operation

Various Types of Processing in Modern Plant With Constantly Changing Prices Necessitates Accurate Method

By Paul C. Girard*
Marland Refining Co.

The function of the refinery cost department may be summarized as threefold.

1. To record and analyze in detail the processing operation, as a guide to efficient refining practice.

2. To report the result of operations to the management through financial and operating statements, from which it will be possible to not only analyze past performance, but also establish specific manufacturing and sales policies.

3. To maintain records indicative of present finacial status, future capital requirements, and the anticipated results from predetermined policies.

Carrying out these functions adequately the cost department becomes, in effect, the eyes of the management, and working hand in hand with the operator, can aid immeasurably by supplying a basis for an intelligent control of current operation as well as future development.

When laying out and developing a cost system for the Marland Refining Co. the above principles were set as a standard, and by adherence to these objectives, and with the co-operation of the manufacturing department, satisfactory results have been attained, so that we are in substance functioning as a branch of the refinery, furnishing a basis for guiding and controlling the operation, in addition to recording the history of past performances.

The methods in use by ourselves, which I will attempt to outline in detail, are followed in principle by many of the largest refining companies throughout the country, with which I have had somewhat intimate contact, and in fact there is so marked a similarity of procedure and final setup that a standardization of cost accounts for the refinery, along the lines now being worked upon by the Accounting Committee of the American Petroleum Institute, could be carried out with comparatively few changes, and without destroying the value of statistics accumulated through prior years' operations.

Departmentalization

The first step in laying out our cost system was to divide the operation into sections which might be classified as processing or productive, which is further split as between crude skimming, pressure still cracking, and lubricating oil manufacturing; the second major group includes the various auxiliary units such as steam and electric power costs, water supply system, etc.; a third group including mechanical shops, overhead and miscellaneous refinery facilities; the fourth and last section comprising various plant and operating administrative expenses.

Each of the above sections is subdivided into several departments covering distinct processes or operations, the final result being the production of a cost sheet for each unit or phase of the refinery operation.

The portion of overhead applicable to auxiliary service units is applied to the same, the balance of overhead, and net cost of auxiliary service is spread over the processing departments in proportion to service rendered, and a final cost of operation for each process which includes its proportion of both auxiliary and overhead expense is thus determined. We have found that the study of these cost sheets enables up to watch closely any fluctuation of expense, and by passing copies of their respective costs to the departmental heads responsible for the same, a marked interest in costs and the relation of expense to the efficiency of the operation has been created in the plant itself.

The expense of each department is, of course, further divided through a subclassification of expense numbers covering labor, supplies, maintenance, fuel, chemicals, etc.; to which I will refer later.

Crude Skimming

The first major section of the operation, crude skimming, includes all departments engaged in the initial distillation of crude oil treating of straightrun gasoline and kerosene and covers the following departments, the names being self-explanatory: Continuous distillation, Foster pipe still distillation, distillate rerunning, batch treating, continuous treating.

For each of these processes a unit throughput cost is developed, and a corresponding yield determined from the crude or distillates charged, based on run tank temperature corrected figures. Where several stocks or distillates are run through the same processing unit, a segregation of expense is made on the basis of still hours for all indeterminate factors, any special expense applicable to a particular stock being charged thereto. For instance, in our refinery, the continuous still and rerun batteries are operated in actual practice as a single unit, but by metering fuel consumed, estimating proportionately steam, water, etc.; an exact apportionment of royalties, maintenance, auto service, etc., and arbitrary split of remaining expenses, a reasonably accurate cost as between crude topping and distillate rerunning is determined.

In arriving at treating costs, an exact record of the chemicals used on each distillate is furnished by the operating department, the remaining items of expense being apportioned on the basis of treating time consumed.

In addition to the above directly productive units, this section also includes what may be called processing service part, in as much as they are a component part of the processes, although not directly productive in themselves. These include the following: Pumping expense, working tankage.

When the final cost of operating these departments has been determined, their expense is carried into the first group of processing units on a basis of barrels handled.

Cracking Distillation

We have in the Marland refinery three cracking processes, and it is, therefore, essential that we know the comparative cost of gasoline produced from each. This section is accordingly divided into the following processing departments: Fleming distillation, Cross distillation, Dubbs distillation, pressure distillate treating, pressure distillate rerunning, pressure gasoline sweetening.

As each of the above cracking processes is substantially complete within itself, no processing service departments are necessary, and we are through this procedure able to obtain a direct cost of making cracked gasoline by individual processes, as compared against straightrun, which is particularly valuable in these days of low gasoline markets, and fluctuating values for gas and fuel oils.

In addition to the cost of manufacturing refined products, is also the expense of operating and maintaining tank storage and loading same to cars. We have, accordingly created two departments known as: Storage tank farm; refined oil loading.

This expense is handled monthly against products actually shipped in order to avoid undue appreciation of inventory values against products remaining in storage.

Lub Oil Manufacture

In the manufacture of lubricating oils and waxes, an accurate analysis of processing expense is especially important, in as much as the processing forms by far the major part of the cost of producing finished lubricating products, starting with a comparativley low-priced lubricating stock, and deducting the value of refined oil by products produced in the course of the operation.

In our lubricating plant the following processes are involved, each of which is handled as a separate department for which an individual unit throughput cost is developed: Lubricating stock distillation, treating, gravity filtering, contact filtering, centrifuging, steam stilling, lubricating oil reducing, lubricating oil blending and barreling, wax pressing, wax sweating, wax filtering, wax packing and shipping.

The lubricating department also includes the following processing service units, operated in conjunction with the lubricating manufacture, and properly constituting a portion thereof: Filter clay burning, filter wash, sand filtering, lubricating pumping expense, lubricating oil working tankage, lubricating loading and shipping expense, acid recovery.

In connection with our regular refinery, we also operate an acid recovery plant for the restoration of sludge acid from treating operations. This expense has been divided into two departments, known as: Sludge acid separating, weak acid concentrating.

The acid plant receives the sludge acid at no charge, with the exception of any external purchases, stands all expense of recovery, ad is credited with value of restored acid returned, any balance being absorbed as acid plant profit or loss.

Auxiliary Service Departments

The second major group of departments includes all utility or auxiliary service units operated for the benefit of the processing operation, but not forming a direct part of the same. In this section are included the following: Electric light and power plant; steam power plant, fuel circulating system, gas distributing system, air distributing system, main water supply system, river water pump station (an adjunct to main water supply), oil sewers and traps.

In developing the cost of operating each of the above departments consideration is given to the amount of service rendered to each other, as for example the amount of steam used in generating electric current, and vice versa, also the amount of overhead and adminstrative expense applicable, in order to determine a net cost of operation per unit produced or handled.

When the final cost of operating these departments has been arrived at, clearance is made to the various processing departments on the basis of service rendered as indicated by meter measurements or engineering estimates, as may be most practicable, after giving effect to any charges to outside departments or companies to which services may have been delivered.

Plant Overhead

The third group of departments comprises units directly connected with the operation and maintenance of processing and auxiliary facilities, but yet not of an administrative nature, and includes all mechanical shops overhead, and facilities of a similar nature, as follows: Refinery yard expense, fire protection, refinery employment, mechanical general overhead, engineering, welding and pipe shop expense, electric shop, boiler shop, pump repair shop, meter and instrument repair shop, paint shop.

The total overhead expense of operating these departments is cleared monthly to processing and auxiliary accounts, the first three, refinery yard, fire protection and employment, on a proration based on operating pay roll expense, and the mechanical departments overhead in proportion to maintenance work done during the period covered.

Refinery Adminstrative

The fourth and last group includes all departments of an administrative or control nature, as follows: Laboratory, works office, tabulating machine expense, refinery general accounting, refinery administrative expense.

The total expense of these departments is cleared monthly to all other departments, in proportion to estimated service rendered in the case of the laboratory and plant office. Tabulating and accounting are closed into general administrative, which in turn is cleared over all departments throughout the refinery on a total pay roll expense basis.

I am afraid that at first thought this process of applying overhead may appear somewhat elaborate and cumbersome, but in practice such is not the case, as by a sequence of clearances whereby all minor charges are eliminated, or a flat service charge made, all interlocking of accounts with the exception of three or four major utilities is avoided. Nor are the actual direct expenses of a department lost, as a preliminary statement of expense within each department, excluding all items of service or overhead is also furnished and compared currently against similar costs for previous periods.

Expense Classification

Having divided our entire operation into departments, the next step is the analysis of expense items, and for this purpose a standard set of expense numbers is used, the same number being used for a similar item in any department. We have found the following breakup, in conjunction with certain sub-analytical classification, well suited to our requirements.

Expense item 1, salaried payroll, includes all salaries whether administrative or operating, as distinct from hourly wages, and is further divided among the following classes of employes: Supervisory, clerical, chemists and testers, engineers and draughtsmen.

The second class of expense is known as operating labor, representing time of all hourly employes engaged in actual processing or operating labor, as distinct from repair or maintenance service. This labor is further divided on cost sheets as between operators, cleaners, coke handlers (pressure stills only), operating service (work of an operating nature performed by other than regular departmental operators), chemists and testers, engineers and draughtsmen, vacation time (time of hourly employes paid during vacations and charged to department in which they are normally employed.

The next item of expense, operating supplies, included all miscellaneous supplies used in conection with direct operation, as brooms, waste, packing, etc., and through a sub-code is analyzed as to the nature of the articles used, and periodic reports furnished the management and department heads, as a curb against excessive use.

In so far as possible, all charges for automobile and truck service are charged direct to the department using the same, any unallcatable being absorbed on one or another of the overhead accounts, and

*Semiannual meeting National Petroleum Association, Cambridge Springs, Pa., April 28 and 29.

for this purpose expense item No. 4, known as auto and truck expense, is used.

Fuel, one of the most important items in refining operations, is charged as Item No. 5, and is further divided as between oil, gas and coke, no coal being used in our refinery.

Another important element of expense in the refinery processing is chemicals such as acid, caustic, litharge, etc., used in treating, filter clay, calcium, naphtha and items of a similar nature. Such supplies we have included under a separate classification, called processing supplies, maintaining a sub-anaysis as to the supply itself for incorporation in departmental cost sheets.

Royalties paid, or amortization of purchased patent rights is given a distinct classification which is further divided to indicate specific royalties paid on any particular process.

Repair Work

Maintenance and repair work constitute a considerable portion of the expense in any operation, and is one of the most difficult to control. We have attempted to distinguish between work of a repair nature, and alterations made due to changes in operation, temporary expedients, etc., and for this purpose have opened two classifications, known as repair maintenance, covering actual repairs and replacements and operating maintenance, covering operating changes made as above mentioned.

Each of these items is further divided as between labor and material, and through a subclassification is analyzed according to type of equipment worked upon, semimonthly reports being issued showing the cost of maintenance in each department against each class of equipment.

In case it is necessary to make any expense repair or alteration, which is the result of an extended period of operation or which will benefit future operations for an indefinite time, this work is handled through an extraordinary expense authorization, and is cleared to manufacturing expense through a period of months, in preference to absorbing the entire amount in a single month's costs, through an expense item known as extraordinary maintenance, which is further divided as between labor, material and overhead expense. For such charges we have established an arbitrary minimum of $5,000 and require special approval of the manufacturing manager and refinery accountant before classifying as such.

The above items all cover direct charges within the department itself, controllable either in values or quantities by the operator and include no prorated or applied expense from other departments, the remaining items being of an overhead nature which are carried in a group known as overhead expense, and including property insurance, use and occupancy insurance, compensation insurance, sick benefits, traveling and other expense accounts, telephone and telegraph expense, rentals, unclassified plant overhead and taxes.

Clearing Accounts

I have previously referred to the clearing of utility, shop and operating overhead, etc., to processing operations. This is handled through a separate group of accounts known as clearing accounts, which correspond in name to the department, the expense of which is to be cleared or applied, as electric light and power, steam water, laboratory expense, plant office expense, etc. I do not believe it is necessary to enumerate the complete list, as it is simply a repetition of the departmental names falling within the utility and overhead groups.

After obtaining a net cost of operation of a department and unit cost of manufacture, any credits for service rendered are credited through an expense credit item called refinery service charges, which is further classified as follows: Inter department, covering other departments of the Marland Refining Co.; inter company, work done for subsidiary or allied companies; authorizations; capital investment direct; public, and product costs.

All expense having been accumulated departmentally and carried into processing operations as previously outlined, the next step is the determination of product costs which will include both raw materials and manufacturing expense. In our case we consider as raw material, crude, gas or fuel oil used as charging stock at cracking stills, lubricating distillate for the lubricating and wax operation, and casinghead used in blending finished gasolines.

There has been considerable discussion in recent years as to the proper method of allocating raw materials and manufacturing expense to refinery products, as a result of which two methods are principally advocated, one known as the Federal trade commission plan and the other the single product or by-product method.

Under the Federal trade plan, the entire operation is treated as one unit, on the theory that all products manufactured are produced from a basic stock as a result of a sequence of processing, and hence should share equally in any profits or losses. Costs are accordingly prorated over all products in proportion to their relative realizable values. We have found considerable objection to this from a manufacturing viewpoint, if accepted in its entirety in, that under this method the final product costs of individual products bear little relation to the actual known expense, which in many cases is entirely disproportionate to a ratio value of the entire yield, particularly in the case of cracked gasoline, lubricating oils and waxes.

Under the by-product method, one product is considered as the ultimate purpose of the operation and bears all expense, and all other oils produced are treated as by-products and credited to the total expense at their realizable value, the balance of costs being applied to the major product.

Having tried a modification of the Federal trade plan for several years, we have found an adaptation of the by-product method more suited to our purposes, in that it is more flexible in operation, and lends itself more readily to reconciliation with check estimates, budget programs, etc.

Product Costs

In developing product costs, we have divided our operation into three basic groups, crude skimming, cracking and lubricating oil and wax manufacture. The by-product plan in its entirety is followed in connection with crude skimming, gasoline being considered the main product and bearing all cost of crude and processing, and receiving as credits the value of untreated kerosene, stove distillate, gas oil and fuel or lubricating stock. The cost of treating raw gasolines is added to finished gasoline costs and similarly the treating expense of finishing raw kerosene is borne by it. In determining value of kerosene, we use value of the finished products less treating expense as known by previous experience.

In arriving at the costs of cracked gasolines, the gas or fuel cracking stock is charged at the current market value of corresponding grades, plus all expense of cracking, treating pressure distillates, rerunning and finishing of pressure gasoline, credit at market being given for any by-products recovered in processing.

The lubricating and wax department is charged for its basic material at the current value of a corresponding grade fuel oil, plus a predetermined premium, and throughout this operation on the by-product plan is followed for each step, that is, the major distillate resulting from a given process is considered as the prime product, and bears all expense, any by-products being credited at either their market value as finished products, or cost value as determined on prior operations.

For example, in the first lubricating distillation, untreated cylinder stock is considered the major product, and bears all cost of lubricating distillate and processing, the by-products being gas oil and wax distillate, which is given a gas oil value.

From this point on we have practically a clear path through the operation, as the remaining processes result mostly in a further improvement of the cylinder stock, through treating, filtering, dewaxing and final distillation to produce a finished bright stock.

Similarly, the wax distillate is redistilled to produce a cracked wax distillate, the by-products being gas oil and fuel oil, the cracked wax distillate is then carried through the pressing operation to produce a pressed distillate and slack wax. This pressed distillate is then carried through the P. D. stills, treaters, filters, etc., to produce finished neutrals, while the slack wax is brought through the sweaters and filters to make a finished white wax.

Through these methods we secure a series of built-up figures showing costs at any stage of any process, which we find bears a very close relation to a profitable realizable value, and also reflects closely any fluctuation in operating expenses.

We have found this plan particularly advantageous from an accounting standpoint, in that it enables us to carry refinery inventories at cost for both finished and unfinished products, at figure well below markets, and avoids the objection of carrying into current operations large fluctuations of profit or loss due to market rises or declines, as frequently occurs when inventories are arbitrarily priced for financial purposes at a current market figure.

As previously intimated, inventories are carried at cost, and in arriving at cost of goods sold the average of the previous inventory and current production is used, so as to avoid the accumulation of stocks priced at either excessively high or low figures.

Depreciation

So far no mention has been made of depreciation as an element of cost. While this undoubtedly constitutes an important item which must be considered, we have not seen fit to handle depreciation as a part of manufacturing product costs, for the reason that in the structure of the financial profit and loss statements we desire to arrive at gross earnings before depreciation, and do not wish to carry this element into our inventories of merchandise on hand, but rather charge off such amounts against current operations, that is, goods actually realized through sales.

However, in estimating costs of products for purposes of budgeting, establishing operating and sales policies, the factor of depreciation is always applied as an element of cost, using for this purpose a flat rate figure, which our experience has determined as correct for the process involved.

In computing depreciation for financial statement purposes the straight line method is followed, that is, a fixed rate on actual invested capital. While this is quite simple and satisfactory from an accounting standpoint, it is not entirely correct from the operating angle, considering the various types of equipment in use in certain departments, and the varying life and probability of obsolescence known to exist.

A more exact plan presupposes a breakup of investment corresponding to the operating departmental plan, and an analysis of the equipment therein so that more exact depreciation rates for the unit groups may be determined. For example, while 10 per cent might be quite sufficient for a complete refinery as a whole, 7 per cent would appear sufficient for a group of shell stills, while buildings and equipment used in lubricating operations will probably endure for 20 years or more, and should not bear more than 5 per cent, and on the other hand pressure still ng equipment should perhaps be depreciated at a rate of 20 per cent annually, considering the hazard of operation and rapid changes in present-day development.

Our refinery capital investment is already so divided as above and we are at present engaged in establishing a set of departmental depreciation rates, taking the various factors of service, probable normal life, obsolescence, etc., into consideration, with the view of arriving at rates which will closely approximate the plant flat rate as a whole, but which will more nearly reflect the costs and results of individual departmental operations.

In addition to the costs of manufacture, including raw materials, operating expense and depreciation, there are, of course, certain items of selling and handling expense, such as tank car rentals, operation of sales offices, etc., which are no doubt familiar, and which are handled by us in the usual manner, that is, as a deduction from a net earnings, resulting in a final net profit from the refinery operations for the period under consideration.

Yield Data

In order to correctly apply cost figures, it is, of course, necessary that yields be developed to correspond to the departmental processing expense costs. With this end in view, yields from each individual stocks charged to each process are determined daily based on run tank and daily gauge temperature corrected figures, which are adjusted at the end of each month to tie into final plant yield figures. These figures are then used in determining product costs as previously outlined.

In addition to departmental yields, summaries are prepared showing composite results from different basic crudes or complete processes carried to an ultimate figure based on laboratory analysis of unfinished distillates. As a check on the current operation eliminating inventory fluctuations, a report is prepared converting these yields on the basis of current market values, as against the cost of current operations, including crude or other basic raw materials.

In the foregoing outline of our cost methods, I have endeavored to avoid going into an elaborate discussion of routine detail, and there are no doubt many points as to procedure which are not fully explained. The subject is quite an extensive one, and I can only say in a word that the whole plan is based on the theory of departmental organization, and presupposes the hearty co-operation of the refinery operating department, which we are fortunate in having, and a spirit of service on the part of the cost accounting department, which we endeavor to maintain. The results have been satisfactory in our own case, both from the managerial and operating standpoint, and while the system may appear somewhat elaborate in its ramification, I have found it sufficiently flexible in principle so that it can readily be adapted to the smaller refinery, whether a complete operation or purely skimming and cracking, through the elimination of any nonessential departments.

The whole subject of costs and control is most vital in the petroleum or any other business in these days of intense competition, and it is my fixed belief that through adherence to the principle of mutual co-operation between the operator and the cost accountant that full value can be obtained in return for all cost accounting expense, and that the cost figures properly developed should be one of the most important basis of current control and future policy.

FRENCH OIL MONOPOLY EFFECTIVE NEXT YEAR

By C. E. Kern

WASHINGTON, D. C., May 3.—The French petroleum monopoly will be established January 1, 1928, according to a cablegram received by the Department of Commerce from the Commercial Attache at Paris. This date was fixed by the Chamber Finance Committee in agreement with the Minister of Commerce. The date fixed, however, is subject to postponement depending upon the results of investigations being conducted among French importers. It is anticipated that this import monopoly would result in revenue exceeding 1,000,000,000 francs.

The government is still inquiring respecting complications that may result between France and other states, and it is feared that this monopoly may interfere with efforts made by France to acquire petroleum deposits, many of which, are now under foreign control.

REFINING AND MARKETING

PROGRESS IN MERGER OF N.P.M.A. AND I.O.M.A.

CHICAGO, Apr. 30.—A final meeting of the special executive committee appointed for planning the merger of the National Petroleum Marketers Association with the Independent Oil Men of America was held here, and the work completed so far as the committee is concerned. The articles of incorporation have been amended with a new set of articles and by-laws, under which the Independent Oil Men of America will be under the control of a board of 30 directors. Twenty-seven of the present directors of the National Petroleum Marketers Association become directors of the Independent Oil Men's Association, and three new directors will be elected.

These directors will have general control of the organization. Not more than three directors shall be chosen from any one state. At their annual meeting, the directors shall choose one of their number to serve as chairman for one year. He may be present at the meetings of the trustees, but will not have a vote as trustee. The directors are to appoint from their number a board of five trustees. This board will have such power and authority as may be conferred upon it by the board of directors. The board of directors' majority vote will elect a president with the usual authority vested in such a general manager. He employs all help and fixes salaries, including the secretary and treasurer, which offices may be held by one person. All his acts are subject to the approval of the trustees.

There are to be three classes of membership: active, subscribing and associate. The first class is confined to active marketers of petroleum products, and is subdivided into distributors, compounders and refiners, according to the nature of the business. The subscribing members are to be jobbers who desire to further the purposes of the association relating only to national problems of the active members. Subscribing members are not entitled to use the insignia of the organization. This class will be made up largely at the start from the membership of the National Petroleum Marketers Association.

Associate Members

Associate members will be such refiners and supply men as are in sympathy with the objects of the organization. Dues of active members are to be fixed by the directors, subscribing members $25 a year and associate members $500 a year. Provisions are made for regular annual meetings of the members and for regular monthly meetings of the directors and trustees. The chief activity of the organization will apparently be concentrated on the line of work now done by the Independent Oil Men of America, with some occasional attention paid to national problems, but matters relating to state policies will be left to the state organizations, which are steadily becoming more efficient. A full meeting of the board of directors has been called for May 5, at which time the new constitution and by-laws of the Independent Oil Men of America will be considered for final approval.

BUYS LILLY OIL CO.

SHREVEPORT, La., April 30.—Louisiana Oil Refining Corp. of Shreveport, La., has purchased the Lilly Oil Co. a jobbing firm of Hamilton, Ohio, according to an announcement by M. J. Grogan, general manager. The Lilly Petroleum Co. includes one bulk station and three service stations. The deal is effective May 1. This purchase gives the Louisiana Oil Refining Corp. another foothold in Ohio, in which State the Shreveport company has been expanding its marketing facilities rapidly.

PRACTICES WHICH CAUSE DISPUTES BETWEEN REFINERS AND MARKETERS

By Frank Berry*
James B. Berry's Sons Co.

Our chairman has asked me to bring to your attention a few practices involved in the handling of oil products, some of which have been so persistently used that they have become oil trade customs.

My connection with the industry is such that my observation is largely confined to that of a buyer or seller, rather than that of a manufacturer. I would not presume, therefore, to say how any of these practices may be best corrected, so I am just going to point out a few of them, simply for the purpose of discussion.

There is not any doubt in my mind but what cylinder stocks at the present time are the most difficult products to handle satisfactorily, but before going into this I would like to say a word of praise for our Committee on Standards and Tests—for the good work they have done and are doing in standardization tests. Perhaps most of the difficulties now encountered are largely due to the human element which enters into the making of these tests, particularly the flash and pour tests.

There was a time when it was not uncommon to buy and sell 600 and 650 Pennsylvania cylinder stocks on fire test alone, and the jobber apparently took for granted the other tests would be satisfactory. Today certain flash, pour, viscosity, tar and carbon tests must be met. For export the Holde test for hard asphalt is required. Right here is a point for discussion, for as far as I can learn very few of the Pennsylvania refiners care to make the Holde test, with the result that these stocks must be sold on samples and the assurance of a representative sample is sometimes uncertain, so that even this manner of handling is not entirely satisfactory. Furthermore, it involves considerable time and unless the quotation is withheld until the sample is approved a loss may result—particularly in a fluctuating market.

Bright Stocks

In passing on to the regular bright stocks and long residuum bright stocks, most trouble seems to be encountered in determining the exact color. I believe the Union Colorimeter has been adopted as the standard, but apparently it is not universally used.

There are two grades of E filtered stock manufactured in the Pennsylvania regions—the Warren and Oil City. So far as I can ascertain the Warren E corresponds with the E colors adopted by this association but there is a great deal of controversy in the trade determining just what the Oil City E color should be.

Very frequently controversies arise between the buyer and seller due to carelessness and negligence in loading and unloading cars. It is very essential that the men in charge of this work follow out instructions—such as seeing the valve is seated properly, and the double or lock nut is on the bolt that goes through the rod; also to make certain that cars are well cleaned—particularly after having hauled heavy or dark mertial. It is very necessary that both buyer and seller use great care when measuring outages.

Gasoline Specifications

Kerosene and fuel oil are comparatively easy to handle, but gasoline is a different problem, for the initial, intermediate points, endpoint and corrosion test are to be dealt with. In as much as U. S. Motor specifications do not include gravity, and allow as dark as 16 color, these points must be watched, providing that the customer has been in the habit of buying 58-60 gravity and water white color.

Quite frequently the phrase "good

(Continued on Page 164)

*Before National Petroleum Association, Cambridge Springs, Pa.

OKLAHOMA CHEMISTS MAKE INSPECTION TRIP

During the meeting of the Oklahoma section of the American Chemical Society held in Tulsa April 30, inspection trips were made through several industrial-chemical plants in the morning, and in the afternoon papers were read covering various phases of practical chemistry.

A. L. Davis, chief chemist of the Empire Refineries, Inc., described the application of the modified iodine method for color control on neutral lubricants. A table showing the relation between the color of the various standardized alkaline potassium, iodide and iodine solutions and the Union colorimeter served as the basis of interpreting the results. This method is being used and is being further developed by Mr Davis in the refinery at Okmulgee, Okla. It is being applied in the laboratory control work during the manufacture of bright stocks also.

The paper prepared by W. F. Padgett of the University of Oklahoma and read by E. L. Hesley, also of the University of Oklahoma, showed the broad field offered to the use of the microscope in the refinery laboratories. The results of his studies on wax crystallization and oil suspensions were made very clear by the many photomicrographs shown.

TEXAS GASOLINE TAX $13,000,000 A YEAR

SAN ANTONIO, Tex., May 2.—Five of the largest oil companies of Texas conducting filling stations paid a total of $601,031 into the state treasury of Texas covering the 3-cent gasoline tax from March 17 to 31. The law became effective March 17 and this is the first payment under it. On the basis of these payments the state comptroller estimates that the total revenue to Texas under this act will be about $13,000,000 a year and of this three-fourths goes to the highways and one-fourth to the schools. Under the old law the tax was 1 cent.

Payments of the five largest companies were Gulf Refining $178,023, Magnolia $172,570, the Texas Company $151,024, Pierce Corporation $52,553, Humble Co. $46,860.

ILLINOIS GAS TAX PROPOSED

CHICAGO, Apr. 30.—The long expected administration gasoline tax measure was introduced in both branches of the legislature on April 28. It proposes a 2-cent tax on all motor fuels except kerosene, the proceeds to be devoted to the building, improvement and maintenance of highways. Motorists entering the state may bring in a quantity not to exceed 20 gallons. Distributors are allowed a 3-per cent outage for evaporation. Provision is made for the rebating of the tax on gasoline used for purposes other than motor transportation. If the measure becomes a law it is to go into effect on July 31.

MARKETING ETHYL GASOLINE

SHREVEPORT, La., Apr. 30.—Through a contract which has just been entered into with the Ethyl Gasoline Corp., the Louisiana Oil & Refining Corp. in May will market ethyl gasoline through all its stations not only in this territory but also in Ohio.

PROFESSOR HAS LARGE COLLECTION OF DOPES

Prof. J. Hunter of the University of Colorado has a museum of "dope materials" which he has analyzed at various times in connection with the claims that these dopes when mixed to gasolines added to the motor fuel value of the blended product. Professor Hunter now has over 200 of these "specimens," according to Dr. Gustav Egloff of the Universal Oil Products Co.

Doctor Egloff in an address last week at the Cambridge Springs meeting of the National Petroleum Association said in part:

"These dope specimens were put up in fancy containers and labeled with inflammatory names of which the following are representatives: Gascarets, castolene, motorginger, radimite, gascene, inajiffy, gomor, lesgo, gaspep, dycopep, gastonic, electrolene, nulifegas, leolite, culco, car-bon-ale.

"The bulk of the samples, either white or colored, showed upon analysis the familiar moth balls or naphthalene, having no special virtue as far as improving the antiknock properties of motor fuel are concerned. A large sum of money has been expended throughout the country in an endeavor to put over 'dopes' such as the above having no special merit.

"However, there are so-called 'dopes' which are highly effective in producing an antiknock motor fuel by the addition of relatively small quantities. The leading members of this type of dopes are tetraethyl lead, iron carbonyl, colloidal sols of iron, lead, etc. The aromatic amines such as aniline and paratoluidine are also quite effective in reducing the detonating properties of motor fuel. Iodine compounds are effective also in reducing the knock properties of motor fuels.

"The use of tetraethyl lead is quite widely distributed in the United States. It is the most effective so-called 'dope' so far discovered which has worked out on a commercial scale. It is being marketed under the trade name of ethyl gasoline."

McCOLL BROS. ANNUAL MEETING

CHATHAM, Ontario, Apr. 30.—At the annual shareholders' meeting of McColl Bothers, Ltd., held at Toronto, April 19, the directors were all re-elected and officers were reappointed: J. W. McColl, president; Emma McColl, H. H. Bradburn, vice presidents; Arthur Hughes, secretary, and E. B. Foy, treasurer.

MEETING OF ILLINOIS OIL MEN

CHICAGO, Apr. 30.—At the district meeting of the Illinois Petroleum Marketers Association held at the Hotel Nelson April 27, the chief discussion was regarding the adoption of a state emblem. This has been done in several states. The plan is for the adoption of a sign or symbol that represents the state in outline surrounded by the name of state organization, whose members are entitled to display the symbol.

Acute Selling of Oil Securities Halts

Trading Active and Irregular During the Past Week but Support Makes Its Appearance

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, May 2.—Oil securities were active and irregular during the past week. Acute selling, current in several issues recently, seemed to have passed and support made its appearance. The flood outlook probably restricted any extensive buying of oils as well as other securities.

It is stated that plans for financing in connection with the California Eastern Petroleum Co reorganization of Julian Petroleum and others through a $7,500,000 bond issue have been abandoned. Senator Frank F. Flint, legal advisor of California Eastern, has been elected chairman of the board of directors and executive vice president. Chairman Flint states that the financial structure of California Eastern had been changed to do away with the bond issue, and that instead, additional working capital of $1,000,000 had been secured through the sale of 100,000 shares for cash at $10 a share. Exchange of Julian Petroleum stock for California Eastern shares will proceed on terms previously announced.

Tide Water Associated Oil

The Tide Water Associated Oil Co., in its initial report, covering the nine months ended December 31, 1926, shows consolidated net income of $9,885,908 after depreciation, depletion, Federal taxes, minority interest, etc., equivalent after deducting preferred dividends to $1.38 a share earned on the outstanding 4,786,479 no par value shares of stock. The company owns 78 per cent of the common stock of the Tide Water Oil Co. and 94½ per cent of the stock of the Associated Oil Co.

The consolidated income account for the nine months ended December 31, 1926, follows:

Gross sales	$126,776,088
Expenses, etc.	106,254,276
Operating income	$ 20,521,812
Other income	1,324,557
Total income	$ 21,846,369
Depreciation and depletion	8,687,520
Federal taxes	1,150,086
Profit	$ 12,008,763
Min. int. prop. of earnings	2,122,855
Net income	$ 9,885,908
Preferred dividends	3,261,213
Common dividends	2,854,937
Surplus	$ 3,769,758
P. & L. surplus	3,595,027

The consolidated balance sheet of the Tide Water Associated Oil Co. as of December 31, 1926, follows:

Assets: Properties and equipment, less depreciation and depletion, $138,495,568; investments, $18,527,717; cash, $6,669,114; marketable securities, $6,135,950; notes and acceptances receivable, $2,233,512; accounts receivable, $13,619,603; due from affiliated companies, $808,701; crude oil and products, $45,172,102; materials and supplies, $7,054,539; other current assets, $131,352; reserve funds, $3,229,798; advances, $1,182,737; sinking fund, $162 975; deferred items, $3,736,430; total, $247,160,098.

Liabilities: Preferred stock, $72,724,400; common stock (represented by 4,786,479 shares of no par value), $74,536,418; funded debt, $21,525,000; notes payable, $1,466,798; purchase money obligations, $1,513,518; accounts payable, $12,609,190; wages, interest and miscellaneous, $3,392,055; due to company affiliated, but not consolidated, $1,942,055; estimated Federal taxes, $1,298,721; dividend payable, $1,117,420; employes payments on subscriptions, $324,281; deferred purchase money obligation, $1,250,352; deferred and unadjusted items, $1,029,516; reserve for contingencies, $5,651,155; minority interest in subsidiaries, $43,186,988; surplus, $3,595,027; total, $247,160,098.

Phillips Petroleum

The Phillips Petroleum Co. reports for the quarter ended March 31, 1927, net earnings of $6,804,719 after charges and Federal taxes, but before depreciation and depletion, against $6,121,264 before depreciation and depletion in the first quarter of 1926. Stock outstanding consists of 2,406,796 no par shares

The consolidated statement for the quarter ended March 31, 1927, compares as follows:

	1927	1926
Gross	$12,879,312	$ 9,982,596
Exp. and Fed. taxes	6,074,593	3,861,332
Net before depr. and depl.	$ 6,804,719	$ 6,121,264

The New York Stock Exchange has received notice from the Standard Oil Co. of New York of the proposed increase in authorized capital stock of $450,000,000 from $437,500,000. The stockholders at the forthcoming annual meeting (May 26) are expected to act on approving the increase, the purpose of which is to provide stock for sale to employes under the stock purchase plan.

Regarding the plan, the company states: "The plan has been very successful for the purpose intended, and almost 50 per cent of the eligible employes are subscribers. Employes of subsidiary companies, as well as direct employes of the company, are entitled to participate, and on account of the merger of the Magnolia Petroleum Co. and the General Petroleum Co. the number of subscribers to the plan has been greatly increased, so that the $10,000,000 of capital originally set apart for the purpose is now exhausted, requiring the appropriation of additional stock to continue the plan for the remainder of the five-year period as originally contemplated."

Marland Oil

The report of the Marland Oil Co. and subsidiaries for the quarter ended March 31, 1927, shows net income of $228,692 after interest, depreciation, depletion, abandoned leases and reserves for intangible drilling costs, etc., equivalent to 9 cents a share earned on 2,317,059 no par shares of stock.

The consolidated income account for the quarter ended March 31, 1927, compares as follows:

	1927	1926
Gross	$19,350,146	$16,096,643
Expenses	15,581,079	12,555,888
Net	$ 3,769,067	$ 3,540,755
Other income	1,280,330	1,934,188
Total income	$ 5,049,397	$ 5,474,943
Interest, etc.	81,640	7,682
Deprec. and depl.	1,508,133	1,555,915
Reserve for intang. drilling costs	2,828,969	.....
Abandoned leases	401,963	281,280
*Net income	$ 228.692	$ 3,630,066
Dividends	2,310.853	1,887,705
Deficit	$ 2,082,161	$†1,887,705

*Before Federal taxes. †Surplus.

Lion Oil Refin'ng

The report of the Lion Oil Refining Co. for the quarter ended March 31, 1927, shows profit of $500,465 after expenses, interest, etc., but before depreciation, depletion and Federal taxes, against $424,120 in the first quarter of 1926. Stock outstanding consists of 200,000 no par shares of stock.

The income account for the quarter ended March 31, 1927, compares as follows:

	1927	1926
Sales	$2,004,189	$2,059,570
Costs and expenses	1,479,529	1,614,716
Operating profit	$ 524,660	$ 444,854
Other income	5,206	8,624
Total income	$ 529,866	$ 453,478
Interest	20,401	29,358
*Profit	$ 509,465	$ 424,120

*Before depreciation, depletion and Federal taxes.

National Supply

At the annual meeting of the National Supply Co. stockholders, the board of directors was increased from seven to eight members, and B. S. Prentice of Dominick & Dominick was elected to the board. Other directors were re-elected. Subsequently officers were re-elected by directors. The by-laws were changed so that the annual meeting will be held in the future on the first Wednesday of April, instead of the fourth Wednesday.

Pan American Western

The Pan American Western Petroleum Co. and subsidiaries report for the quarter ended March 31, 1927, net profit of $260,138 after interest, depreciation, depletion and Federal taxes, equivalent to 52 cents a share earned on the combined 100,000 no par shares of Class A and 400,000 shares of no par Class B stock, comprising with net loss of $83,433 in the first quarter of 1926 Both classes of stock share alike, but Class A has voting power.

H. F. Wilcox Oil & Gas

The report of the H. F. Wilcox Oil & Gas Co. and subsidiaries for the quarter ended March 31, 1927, shows net profit of $254,767 after depreciation, depletion and Federal taxes, equivalent to 59 cents a share earned on the outstanding 427,896 no par shares of stock.

Atlantic Lobos Oil

The Atlantic Lobos Oil Co. for the year ended December 31, 1926, reports deficit of $4,117,212 after depreciation, depletion, etc., against deficit of $806,032 in 1925.

Barnsdall Corporation

The Barnsdall corporation and subsidiaries for the quarter ended March 31, 1927, report net income of $955.599 after interest, Federal taxes, depreciation and depletion, equivalent to 83 cents a share

(Continued on Page 168)

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. May 2	Clos. Quot. Apr. 25	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	27⅞	28¾	37⅝	30⅝	32⅞	24¾	..	..
Atlantic Ref., com.	100	108½	110	117⅞	107	128⅝	97	117½	95½
Barnsdall "A"	25	24¾	26¾	35½	26¾	32½	23½	33⅛	18⅝
California Pet., com.	25	24¾	24⅝	32⅜	24⅝	38⅛	30⅛	34⅝	23⅜
Houston O l	100	116½	109	124¾	60⅛	75	50⅛	85	59
Independent Oil & Gas	..	19⅛	19⅛	32¾	19⅛	34	20¼	41⅜	13½
Louisiana Oil	10	12½	13	18⅛	12⅝	19⅝	12	23⅜	13⅜
Maracaibo	..	13⅝	15	22⅜	15	27⅜	18⅜	35½	20⅜
Marland	..	37	38	58⅛	37⅛	63⅝	49¼	60⅜	32⅝
Mid-Continent Pet.	..	29½	31	39⅜	30⅜	41	25⅝	38	25⅜
National Supply	50	83⅛	83¾	95⅜	82½	84⅜	55½	71	54¾
Oil Well Supply	25	33⅞	34	40⅜	31¼	36	30	38	33⅜
Pan. Amer., B	50	57¼	57	65⅞	57⅛	72⅜	56⅛	83⅞	59½
Pan. Amer., Western B	..	21⅜	19⅞	37⅞	26⅞	46	34	94⅝	37¼
Phillips Pet.	..	41⅜	41⅞	60¼	41¼	54⅞	42½	47⅜	36¼
Producers & Refiners	50	29¾	24⅜	32	16⅜	26	11	32⅝	12½
Pure Oil, com.	..	26⅞	26⅜	32⅝	26⅜	31	25⅜	33⅜	25½
Royal Dutch, N. Y., sh.	13.40	48⅞	49¾	54½	50	57⅜	49⅜	57⅞	48¼
Shell Transport	10	*42½	*42	49	44½	48⅞	42	49	39⅝
Shell Union, com.	..	27	27⅛	31⅜	26⅞	30⅜	24	28⅜	21⅝
Simms Pet.	10	17½	18	22⅜	18⅛	28⅝	16½	28½	17⅜
Sinclair Consolidated	..	16⅝	17	22⅜	17⅝	24⅞	16⅜	24⅞	17
Skelly O l	25	25½	27	37⅜	26⅞	37⅛	27	32½	21⅝
Standard of California	25	53	52⅞	60⅜	52⅝	63½	54	67⅛	52½
Standard of New Jersey, com.	25	35¼	36⅛	41⅜	36	46⅝	37½	47½	38⅝
Standard of New York	25	30	30⅜	34⅛	31	47⅛	30⅝	48⅝	40
Sun Oil Co.	..	31½	32	34⅞	30	41⅝	30½	43⅞	38½
The Texas Company	25	45⅝	45½	58	43¾	58	48	55	43⅝
Texas Pacific Coal & Oil	10	12¼	13	16⅜	13	19½	12½	23⅜	11
Tide Water Oil	25	*24	*23½	29½	27	39¼	27	..	..
Transcontinental	..	4	3⅞	5	4¼	5½	3	5⅜	3½
Union Oil of California	25	42¼	40½	56½	39⅝	58⅝	37¼	43⅝	32½
Union Tank, com.	100	106	*107	112½	95	120⅝	84¼	†134	118
White Eagle O. & R.	..	22¾	22⅜	27½	22	29⅜	25⅛	21⅝	25⅝
Standard Oils									
Anglo-Amer. Oil	£1	*19⅜	19¼	21⅝	18¾	19⅜	16½	26⅝	17½
Borne Scrymser	25	50¼	*55	69	53¼	75	65	‡240	205
Buckeye Pipe Line	50	*50	48½	45	59½	47⅝	47⅜	72	63½
Chesebrough Mfg. Co.	25	*88½	94¾	95	76½	81½	63	74	48¼
Continental	10	17⅜	18	22⅝	18	25⅞	19¼	31½	21⅞
Cumberland Pipe Line	100	90	*91	137	106	137	102	156	128
Eureka Pipe Line	100	*52	*50½	51¼	47	53¾	43	96	61¼
Galena Signal, com.	100	10	11	13½	10¼	32½	9⅜	68½	2½
Humble O. & R. Co.	25	57	58½	62⅜	54	99⅝	52	99	42½
Illinois Pipe Line	100	141⅜	140	141	123⅜	144	131	154½	124
Imperial Oil	..	44	44	46	37⅜	39¾	32½	39¼	27¼
Ind. Pipe Line	50	*65½	*66⅛	69½	61	68	52¼	84	87½
International Pet. Co.	10	30½	31	34⅞	30⅜	35¼	28⅝	25⅝	22⅜
National Transit Co.	12.50	15⅝	14½	14	13⅜	20⅝	27¼	25½	16½
New York Transit	100	32½	*31½	36	31¼	51½	27¼	79	50
Northern Pipe Line	100	*75⅜	*75	79¼	70	80½	64	88	67½
Ohio Oil Co.	25	55	55⅜	64¼	57½	67⅜	55⅜	75¼	60
Penn-Mex. Fuel	25	*15	*16½	19	16⅜	24½	15	44	19
Prairie Oil & Gas	25	46¼	47¼	55½	45¼	60¼	48	65½	45⅝
Prairie Pipe Line	100	163½	157¾	165½	122	127½	122½	129⅝	105
Solar Refining Co.	100	183	180	101½	185	212	184½	159	200
So. Penn Oil	25	34½	*36½	41½	35⅛	50	35	‡197	139
S. W. Pa. Line	100	*68	*61	62½	55⅛	56	47½	84	50
Southern Pipe Line	50	*17½	*18	27¼	15½	27	24	‡103	63
Standard of Indiana	25	65⅝	65⅝	74¼	66⅛	10½	61⅝	70⅝	69¼
Standard of Kansas	25	*17	17	20⅞	15⅝	36½	16⅛	46	30¼
Standard of Kentucky	25	113	113⅞	122¼	114⅛	134⅝	108	137	114⅜
Standard of Nebraska	25	46½	*46	49½	46⅛	51⅜	42	‡270	231
Standard of Ohio, com.	100	78½	84	254	335	362	192½	369	338
Swan & Finch, com.	25	*16½	16	16	15	21	18	27	12
Vacuum Oil	25	112½	110¼	116½	95¼	109⅜	94¼	103½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	87½	*81	96½	92¼	95	82½	98¼	63⅛
Tidewater Associated	..	16⅝	16½	23½	16½	17	21	..	..

*Bid, no sales. ‡Old stock. †New stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

May 2	57.13	Mar. 28	58.51	Feb. 21	60 26
Apr. 25	57.03	Mar. 21	58.03	Feb. 14	61.13
Apr. 18	57.42	Mar. 14	59,26	Feb. 7	60.51
Apr. 11	57.37	Mar. 7	59.34	Jan. 31	60.09
Apr. 4	56.63	Feb. 26	60.83	Jan. 24	59.89

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	May 3		Apr. 26		Apr. 19	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06	.06¼	.06	.06¼	.06	.06¼
56-58 450 end point	.06	.06¼	.06	.06¼	.06	.06¼
58-60 450 end point	.06	.06¼	.06	.06¼	.06	.06¼
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06¼	.06½
60-62 400 end point	.06⅝	.06¾	.06⅝	.06¾	.06¾	
64-66 375 end point	.07		.07		.07	
68-70 360 end point	.07½	.07⅝	.07½	.07¾	.07½	.07¾
64-66 437 end point (blend)	.06	.06¼	.06	.06¼	.06	.06¼
KANSAS—						
58-60 437 end point (U. S. Motor)	.06½	.06¾	.06½	.06¾	.06½	.06¾
NORTH TEXAS—						
48-50 480 end point (Naphtha)	.06		.06		.06	
56-58 450 end point	.06		.06	.06¼	.06	.06¼
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06⅛	.06¼	.06¼	.06½
60-62 400 end point	.06½	.06¾	.06½	.06¾	.06½	.06¾
64-66 390 end point	.06¾		.06¾		.06¾	.07
64-66 375 end point	.06¾	.07	.06¾	.07	.07	
68-70 360 end point	.07¼		.07¼	.07½	.07¼	.07½
64-66 437 end point (blend)	.06¼		.06	.06¼	.06	.06¼
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.06½		.06¼	.06½	.06¼	.06½
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.06½		.06¼	.06½	.06¼	.06½
PENNSYLVANIA—						
52-54 Naphtha	.08¼	.09	.08¼	.09	.09	.09¼
54-56 Naphtha	.08¾	.09	.08¾	.09	.09	.09¼
58-60 Gasoline	.08½	.08¾	.08½	.08¾	.08¾	09
60 Gasoline	.09¼	.09½	.09¼	.09½	.09¼	.09¾
62 Gasoline	.10	.10¼	.10	.10¼	.09¾	.10
64 Gasoline	.10¼	.10½	.10¼	.10½	.10	.10¼
CALIFORNIA—						
58-60 437 end point (U. S. Motor) domestic	.04½	.05	.04½	.05	.05½	.06
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.06	.06¼	.06	.06¼	.06	.06¼
56-58 450 end point	.06		.06	.06¼	.06	.06¼
58-60 437 end point (U. S. Motor)	.06¼		.06¼	.06½	.06¼	.06½
60-62 400 end point	.06½	.06¾	.06⅝	.06¾	.06¾	.07
64-66 375 end point	.07	.07⅛	.07	.07¾	.07	.07¼
68-70 360 end point	.07½	.07¾	.07½	.07¾	.07¾	.08
64-66 437 end point (blend)	.06		.06	.06¾	.06¼	

NATURAL GASOLINE

	May 3		Apr. 26		Apr. 19	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅝		.04¼	.04½	.04¼	.04½
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04⅝		.04¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼	.04¼	.04⅛	.04¼	.04	.04⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04¼		.04⅛	.04¼
Grade C, 80-90, 375 e.p., rec. 78%	.04		.03⅞	.04	.04	
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04¼	.04½	.04¼	.04½
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04½	.04⅝	.04¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅛	.04¼	.04⅛	.04¼	.04	.04⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04¼		.04⅛	.04¼
Grade C, 80 90, 375 e.p., rec. 78%	.04	.04¼	.04		.04	.04⅛
NORTH LOUISIANA—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05	.05¼	.05	.05¼	.05	.05¼
Grade BB, 84-92, 375 e.p., rec. 85%	.04¾	.05	.04¾	.05	.04¾	.05
Grade C, 80-90, 375 e.p., rec. 78%	.04¼	.04½	.04¼	.04½	.04¼	.04½
CALIFORNIA—						
75-86, 375 390 end point	.06½	.07	.06½	.07		
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½	.04⅝	.04½	
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝		.04¾		.04¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.04		.04¼		.04	.04⅛
Grade B, 76 83.9, 375 e.p., rec. 85%	.04¼		.04½		.04¼	
Grade C, 80-90, 375 e.p., rec. 78%	.03⅞	.04	.04		.04	

BURNING OIL

	May 3		Apr. 26		Apr. 19	
KANSAS—						
41-43 water white Kerosene	.04⅝	.05	.04½	.04¾	.04½	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04¼	.04¼	.04½
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04⅝	.04¾
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¼	.04½	.04¼	.04½	.04½	.04¾
NORTH TEXAS—						
41-43 water white Kerosene	.03⅞	.04⅛	.03⅞	.04⅛	.04¼	.04½
ARKANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04¾	
PENNSYLVANIA—						
43 Kerosene prime white	.06½	.06¾	.06½	.06¾	.06½	.06¾
45 Kerosene water white	.06¾	.07	.06¾	.07	.06¾	.07
46 Kerosene water white	.07¼	.07½	.07¼	.07½	.07¼	.07½
47 Kerosene water white	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 Mineral Seal	.08	.08¼	.08	.08¼	.08¼	.08½
CALIFORNIA—						
38-40 water white (high burning test)	.04¾	.06	.04¾	.06	.05¾	.06½
Engine distillate, 43-45 445 end point	.04¼	.04½	.04¼	.04½	.05½	.06
Engine distillate, 42-44 480 end point	.04	.04¼	.04	.04¼	.04¼	.05½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04¼		.04¼	.04½	.04¼	.04½
42-44 water white Kerosene	.04½	.04¾	.04½	.04¾	.04¾	.05

FUEL OILS

	May 3		Apr. 26		Apr. 19	
KANSAS—						
24-26 Fuel Oil	1.02½	1.05	1.05	1.10	1.05	1.10
32-36 Gas Oil	.02¾	.03	.02¾	.02⅞	.02¾	.02⅞
38-40 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.90		.90	.95	.90	.95
18-22 Fuel Oil	.90	.95	.95	.97½	.95	.97½
22-26 Fuel Oil	.92½	.95	.95	.97½	.95	.97½
24-26 Fuel Oil	.95	.97½	.97½	1.00	.97½	1.02½
26-30 Fuel Oil	.97½	1.00	1.02½	1.05	1.02½	1.05
28-30 Fuel Oil	1.00	1.05	1.05		1.05	1.10
32-36 Gas Oil (dark)	.02⅝	.02¾	.02½	.02⅝	.02½	.02¾
32-36 Gas Oil (straw overhead)	.02⅝	.02¾	.02½	.02⅝	.02½	.02¾
36-38 Distillate	.03		.03	.03⅛	.03	.03¼
38-40 Straw Distillate	.03¼		.03¼		.03¼	
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.85	.90	.90	.95	.90	.95
32-36 Gas Oil (straw)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
38-40 Straw Distillate	.02⅝	.03	.02⅞	.03	.02⅞	.03
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10	1.15	1.10	1.15	1.10	1.15
32-36 Gas Oil	.02¾	.03	.02¾	.03	.03	.03¼
ARKANSAS—						
36-38 Distillate	.03	.03¼	.03	.03¼	.03½	.03⅜
32-36 Gas Oil (straw)	.02¾	.03	.02¾	.03	.02¾	.03
16-20 Refinery Fuel Oil	.95		.95	1.05	.95	
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04⅜	.04¼	.04⅜	.04¼	.04⅜
Fuel Oil	1.50	1.60	1.50	1.60	1.50	1.60
PENNSYLVANIA—						
30-34 Fuel Oil	.05⅞	.06	.05⅞	.06	.05⅛	.05¼
36-40 Fuel Oil	.05⅝	.05½	.05⅝	.05½	.05⅝	.05½
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
*15-20 Fuel Oil, Bunkers (at tide water)	.85	1.00	.85	1.00	.92½	1.04
15-20 Fuel Oil (cargo lots)	.71	.75	.71	.75	.71	.75
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	.95	.97½	1.00	1.05	1.00	1.05
22-26 Fuel Oil (sellers' cars) Group 3	.95		.97½	1.00	1.00	
18-22 (Group 3)	.90	.92½	.95	.97½	.97½	1.00
16-20 Smackover	1.15	1.17½	1.15	1.17½	1.15	1.17½
32-36 Gas Oil (zero)	.02⅝	.02¾	.02⅝	.02⅞	.02¾	.02⅞
32-36 Gas Oil (industrial)	.02½	.02⅝	.02½	.02¾	.02⅝	.02¾
36-38 Distillate	.03¼		.03	.03¼	.03	.03¼
38-40 Straw Distillate	.03		.03¼	.03⅜	.03¼	.03½

*Bunkers.

LUBRICATING OIL AND WAX

	May 3		Apr. 26		Apr. 19	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06½	.06¾	.06½	.06¾	.06½	.06¾
100 vis., 3 color, 20 25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
150 vis., 3 color, 20-25 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
150 vis., 4 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
180 vis., 3 color, 23-28 cold test	.10	.10¼	.10	.10¼	.10	.10¼
180 vis., 4 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 5 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 3 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis., 4 color, 23-28 cold test	.10⅜	.10⅞	.10⅜	.10⅞	.10⅜	.10⅞
200 vis., 5 color, 23-28 cold test	.10½	.10¾	.10½	.10¾	.10½	.10¾
240 vis., 3 color, 25-30 cold test	.14	.14¼	.14	.14¼	.14	.14¼
240 vis., 4 color, 25-30 cold test	.13½	.13¾	.13½	.13¾	.13½	.13¾
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.15¾	.16¼	.15¾	.16¼	.15¾	.16¼
280 vis., 4 color, 25-30 cold test	.15¼	.15½	.15¼	.15½	.15¼	.15½
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.07½	.10	.07½	.10	.07½	.10
600, steam refined, dark green	.05	.06	.05	.06	.05	.06
190-200 vis. @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02¾		.02¾	.03	.02¾	.03
PENNSYLVANIA—						
34 Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
34 Sundebloom Neutral	.08½	.08¾	.08½	.08¾	.08½	.08¾
36 Miners' Neutral	.07	.07¼	.07	.07¼	.07	.07¼
150, 3 color	.28¼	.28½	.28¼	.28½	.28¼	.28½
180, 3 color	.31¾	.32	.31¾	.32	.31¾	.32
200, 3 color	.33¼	.34	.33¼	.34	.33½	.34
220, 3 color	.35¼	.36	.35¼	.36	.35¼	.36
600, steam refined	.09	.09¼	.09	.09¼	.09	.09¼
635, steam refined	.10¾	.11	.10¾	.11	.10¾	.11
650, steam refined	.12¾	.13	.12¾	.13	.12¾	.13
600, Pennsylvania flash	.17½	.18	.17½	.18	.17½	.18
630, Pennsylvania flash	.28½	.29	.28½	.29	.28½	.29
*550, E filtered	.17¼	.18	.17¼	.18	.17½	.18
*600, E filtered	.19	.19½	.19	.19½	.19½	.20
600, E filtered	.18	.18½	.18	.18½	.18	.18½
600, D filtered	.25	.25½	.25	.25½	.25	.25½
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.33	.33½	.33	.33½	.34½	.35
†122-124 White Crude Scale Wax	.03⅛	.03¼	.03⅛	.03¼	.03⅜	.03½
†124-126 White Crude Scale Wax	.03½	.03⅜	.03½	.03⅜	.03½	.03⅝

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07½	.08½	.07½	.08½	.07½	.08½
No. 3 color, 200 vis., pale oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 3 color, 300 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 3½ color, 500 vis., pale oil	.13½	.14	.13½	.14	.13½	.14
No. 4 color, 750 vis, pale oil	.16	.16½	.16	.16½	.16	.16½
No. 5 to 6 color, 200 vis., red oil	.08½	.09½	.08½	.09½	.08½	.09½
No. 5 to 6 color, 300 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 to 6 color, 500 vis., red oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 5 to 6 color, 750 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15½
No. 2 color, 200 vis., pale filtered	.13	.14	.13	.14	.14	
No. 2 color, 300 vis., pale filtered	.14	.15	.14	.15	.14	.15
No. 2½ color, 500 vis., pale filtered	.16	.17	.16	.17	.16	.17
No. 2½ color, 750 vis., pale filtered	.20		.20		.20	
CALIFORNIA—						
130 vis., 2½-3 color	.10½	.11	.10½	.11	.10½	.11

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

200 vis., 2½-3 color	.11	.11½	.11	.11½	.11	.11½
300 vis., 3 -3½ color	.11½	.12	.11½	.12	.11½	.12
350 vis., 3½-4 color	.12	.13	.12	.13	.12	.13
400 vis., 3½-4 color	.13	.15½	.13	.15½	.13	.15½
Red Neutral:						
200 vis., 4½-5 color	.09½	.10½	.09½	.10½	.09½	.10½
300 vis., 5 -6 color	.10½	.11½	.10½	.11½	.10½	.11½
400 vis., 5 -6 color	.12	.13½	.12	.13½	.12	.13½
500 vis., 4½-5 color	.13½	.14½	.13½	.14½	.13½	.14½
500 vis., 5 6½ color	.12½	.13½	.12½	.13½	.12½	.13½
600 vis., 6½ plus color	.13½	.14½	.13½	.14½	.13½	.14½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	May 3	Apr. 26	Apr. 19
Gasoline, U. S. Motor, 58-60 437	.08¾	.08¾	.09
Kerosene, water white, 41-43	.07½	.07½	.07½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.75	1.75	1.75
*Fuel Oil, Diesel, 28-30, per bbl.	2.30	2.40	2.40
Gas Oil, 28 plus	.05¾	.06	.06
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07½	.07½	.07½
285 red Paraffin Oil	.13	.13	.13
250 red Paraffin Oil	.12	.12	.12
225 red Paraffin Oil	.11	.11	.11
200 red Paraffin Oil	.10	.10	.10
Refined Wax:			
120-122 a.m.p., per lb.	.03⅞	.03⅞	.04⅛
125-127 a.m.p., per lb.	.04⅛	.04¼	.04¼
130-132 a.m.p , per lb.	.04¾	.04¾	.04¾
135-137 a.m.p., per lb.	.05	.05	.05¼
Petrolatum, in bbls.: carload lots, per lb.:			
Dark green	.01⅞	.01⅞	.01⅞
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.05½	.05½	.05½
Lily white	.07	.07	.07
Snow white	.08⅛	.08⅛	.08⅛

*Lighterage 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	May 3	Apr. 26	Apr. 19
Gasoline, U. S. Motor, 58-60 437, in cases	.2390	.2390	.2440
Kerosene, standard white, in cases	.1615	.1615	.1665
Kerosene, water white, in cases	.1715	.1715	.1765
600 steam refined cylinder stock, in bbls.	.19	.19	.19
635 steam refined	.21	.21	.21
650 steam refined	.23	.23	.23
600 Pennsylvania flash	.27	.27	.27
630 Pennsylvania flash	.34	.34	.34
600 Warren E	.26	.26	.26
600 Oil City E	.24½	.24½	.24½
Light 135 Bright Stock	.44	.44	.44
Dark 135 Bright Stock	.42	.42	.42

LOS ANGELES EXPORT PRICES

	May 3		Apr. 26		Apr. 19	
Kerosene water white	.04	.04¼	.04	.04¼	.04¾	.05
U. S. Motor Gasoline, 53-55 437 e.p.	.06	.06½	.06	.06½	.06¼	.06½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927) $1.00
Other fields — See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County $ .95
*Hutchinson County .95
Gray-Wheeler Counties — See gravity table

*Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Pipe Line Co. and Kay County Gas Co., March 14.

WEST TEXAS

*Iatan (Same as North Texas)
Crane-Upton-Crockett — See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.16 for Howard County crude, effective March 12.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17) $1.00
Bellevue (Feb. 24, 1927) 1.25
Urania (March 16, 1927) 1.00
East El Dorado (March 16) 1.00
Other fields — See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14) $1.20
Grade B — See gravity table
*Jennings, La. (March 14) 1.05
†Saratoga, Batson, Dayton (March 14, 1927) 1.20
**Markham March 14 1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. **The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (April 7) $1.00
†Miranda (March 14) 1.00
Rockdale-Minerva (Milam County) 1.25
*Thrall ...
Callihan (May 15) 1.75
Lytton Springs (Lockhart) See gravity table
Somerset See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19¼ cents per cwt. freight.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12) $1.35
Salt Creek — See gravity table
Big Muddy (March 12) 1.25
Mule Creek (February 23) 1.30
Grass Creek, light (March 12) 1.33
Grass Creek, heavy .68
Elk Basin (March 12) 1.33
Lance Creek (March 12) 1.33
Poison Spider 1.00
Notches .65
Rex Lake (February 23) 1.10
Osage 1.33
Lost Soldier (contract) (May 17) 1.60
Greybull-Torchlight 1.33
Hamilton Dome 1.35
Cat Creek (Mont.) 1.33
Sunburst (Mont.) (October 5) 1.35
Artesia (March 12) 1.00
Hogback (N. Mex.) (March 14) 1.30

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective March 7)

Penna Grade Oil in New York Transit Line (New York) $2.90
Bradford District Oil in National Transit Lines (Pennsylvania) 2.90
Penna Grade Oil in National Transit Lines (Pennsylvania) 2.80
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia) 2.80
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania) 2.75

(Continued on Page 160)

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	1 Okla., Kans., N. C. Tex., La.-Ark.	2 Smackover, Ark.	3 Stephens, Ark.	4 Wheeler and Gray Counties, (Texas Panhandle)	5 Crane, Upton Crockett Counties (West Texas)	6 Salt Creek, Wyo.	7 Grade B & Light Crude (G. Coast)	8 Somerset, (South Central Texas)
Below 24	....	1.00	....	....	....	....	....	....
24 to 24.9	....	1.25	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25.9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.70	....	....	....
26 to 26.9	....	....	....	....	.72	....	1.19	....
27 to 27.9	....	....	....	....	.74	....	1.21	....
Below 28	****	....	1.00	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.76	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.78	1.14	1.25	....
30 to 30.9	1.16	....	1.06	.84	.80	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.82	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.84	1.20	1.31	1.05
33 to 33.9	1.22	....	....	.90	.86	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.88	1.24	1.34	1.09
35 to 35.9	1.26	....	....	.94	.90	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.92	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and above	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule April 20, making price below 32 gravity 95 cents per barrel, with 2 cents increase per degree higher in gravity, making 33-33.9 gravity at 97 cents as basis, with a top price of $1.35 for 52 and above.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 12; Carter Oil Co., The Texas Company, March 14.

North Central Texas—(Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs [Southwest Texas], Iatan and Panola [Magnolia only], Currie, Nocona, Moran and Corsicana light): Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado only): Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co., March 14.

Column 2—Standard Oil Co. of Louisiana, The Texas Company, Gulf, Atlantic, March 17, Magnolia Petroleum Co. (March 16) posted price of $1.00 for below 24 degrees and $1.15 for 24 and above. Louisiana Oil Corp. posted following prices effective March 16: Below 24, $1.00; 24 to 27.9, $1.15; 28 to 28.9, $1.17; 29 to 29.9, $1.19; 30 and above $1.21.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14.

Column 5—Humble Oil & Refining Co., Kay County Gas Co. and Gulf Pipe Line Co., March 14.

Column 6—Midwest Refining Co., March 12, 1927. All crude over 37 gravity, $1.30 per bbl.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co. which stops at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

****Prices for crude below 28 gravity: Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.10, March 12, 1927; Arkansas, North Louisiana, March 14. Other companies 2 cents less for each degree with exception of Humble Oil & Refining Co. which pays $1.13 for crude below 28 degrees gravity.

CALIFORNIA CRUDE PRICES

*Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)

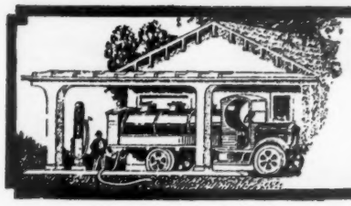
Gravity—	1 Fullerton Seal Beach Long Beach Huntington Beach Richfield Rosecrans-Dom'guez Torrance-Inglewood	2 Whittier La Habra Montebello	3 Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge Buena Vista Hills	4 Coyote	5 Santa Fe Springs	6 Coalinga Salt Lake	7 Wheeler Ridge	8 Santa Maria Ventura, Orcutt
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.86	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.83	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Domingues, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 24 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 39 degrees. Posted only by Union Oil Co.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns April 26.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Chicago dist...	16 0	18 0	...	13 0
Decatur, Ill. ..	16 2	18.2	...	13 1
E. St. Louis ..	15.1	17 35	...	12 2
Joliet	16 4	18 4	...	13 3
Peoria	16.2	18 2	...	13.1
Quincy	14 2	16 2	...	10 9
Davenport, Ia..	18.5	20 5	2 0	13 3
Des Moines....	16 0	18 0	2 0	13.3
Keokuk	18 5	20 5	2 0	13 3
Sioux City	18.1	20 1	2 0	12 9
Duluth, Minn..	19 5	21 5	2 0	13 9
Minneapolis ...	17.2	19 2	2 0	13 9
LaCross, Wis..	19 2	21 2	2 0	14 0
Milwaukee	18 1	20.1	2 0	12.9
Madison	18 3	20 3	2 0	13 1
Detroit, Mich..	18,8	20 8	2 0	14 7
Grand Rapids.	18 7	20 7	2 0	14.6
Saginaw	18 9	20 9	2 0	14.8
Evansville, Ind.	19.0	21 0	3.0	14 0
Ft. Wayne	19 4	21 4	3 0	14 4
Indianapolis ..	19 2	21 2	3.0	14 2
S. Bend	19 4	21 4	3 0	14.4
Fargo, N. D...	20 9	22 9	2 0	15 9
Huron, S. D...	19 0	21 0	3 0	14 9
Sioux Falls....	19.3	21 3	3 0	14 4
*K. C., Mo....	18 0	20 0	3.0	11.6
*Springfield ...	18.8	20 8	3 0	12 5
*St. Louis	17 6	19 9	2 5	12 3
*St. Joseph ..	18 5	20 5	3 0	12 2
Wichita, Kans.	16 8	18 8	2.0	11.8
Bartlesville, Ok.	17.0	19 0	3 0	11 8
Bristol	19 0	22 0	3 0	14 0
Lit. Rock, Ark.	17 0	20.0	4 0	12.0

*Tax of 2c includes city tax of 1c.
*Louisiana kerosene prices include 1-cent state tax and 1 cent parish tax.

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	17 0	11.75
V. M. & P. naphtha	19 0	13 75
Cleaner's naphtha	19 0	13.75
Stanisol	20 0	....

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL

Less than 100 gallons.....	10 0
100 to 799 gallons.....	9.0
800 or more gallons	8 5

Tankwagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

In addition the following quantity discount schedule is in effect on monthly tankwagon deliveries of gasoline 5,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. In the Chicago district purchases of 750 to 2,000 gallons a month discounted one-half cent; and, 2,000 to 6,000 gallons, three-quarters cent. If the quantity bought during the year is 12 times the monthly agreed purchases the discount is paid or credited on the entire quantity less monthly payments.

Monthly service station deliveries of 200 gallons or more, and annual deliveries of 2,400 gallons or more are discounted 2 cents.

*State tax 2 cents; remainder city tax.

SOUTHWESTERN DISTRICT
*Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Dallas, Tex. ..	13.0	16 0	3 0	15.0
Fort Worth ...	14 0	17 .0	3.0	13 0
Houston	15 0	19.0	3 0	15 0
San Antonio ..	13 0	16.0	3 0	11 0
El Paso	17 0	19 0	3 0	16 0
Texarkana ..	15.0	18 0	3 0	12 0
Muskogee, Ok.	16.0	19.0	3 0	10 0
Okla. City	16.0	19 0	3.0	10.0
Tulsa	16 0	19 0	3.0	10 0
Little Rock ..	17 0	20 0	4 0	12 0
Ft. Smith, Ark.	17 0	20 0	4 0	12 0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ¼c; over 2,500 gallons, ⅜c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 9,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*New Orleans..	17.5	18.5	3 0	14 0
Baton Rouge ...	14.0	17 0	2 0	12 5
Alexandria	15 0	18 0	2.0	14 0
LaFayette	15 0	18 0	2 0	13 5
Lake Charles...	15 5	18 5	2 0	14 0
Chattanooga ..	19 5	22 5	3 0	15.0
Shreveport, La.	14 0	17 0	2.0	13.0
Knoxville ..	19 5	22 5	3 0	15 0
Memphis, Tenn.	17 0	20.0	3 0	14 0
Nashville	16.5	19.5	3.0	15.0

OHIO
Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
All Ohio points	18 0	20 0	2.0	15.0

SOUTHERN DISTRICT
Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlanta, Ga....	20 0	23.0	4.0	16 0
Augusta	20 0	23 0	4 0	15 0
Macon	20 0	23.0	4 0	16 0
Savannah	18.0	20.0	4.0	15.0
Birm'ghm, Ala.	20 0	22 0	4.0	15.5
Mobile	19.0	22 0	4 0	15 0
Montgomery ..	21 0	24 0	5 0	16 5
Clarksd'le, Miss.	19 0	22 0	4 0	13 5
Jackson	19.0	22.0	4.0	14 5
Natchez	18 5	21 5	4 0	14 0
Gulfport	20.5	23 5	6 0	14 0
Vicksburg	18 5	21 5	4 0	14.0
Jack'ville, Fla..	18 0	21 0	4 0	14 0
Miami	20.0	23.0	4 0	15 5
Pensacola	19 0	22 0	5 0	15.0
Tampa	18.0	21 0	4 0	14.0
Covington	20.0	23 0	5 0	15 5
Louisville	19 0	22 0	5 0	16 0
Lexington, Ky.	18.0	21.0	5.0	15 5

In addition to the state tax of 2c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only. Pensacola tax includes 1c city levy. Gulfport tax includes privilege tax of 2c in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND
Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Pittsburgh, Pa.	16 0	*21 0	...	14 0
Philadelphia ..	15 0	20.0	...	14 0
Scranton	16.0	*21 0	...	14 0
Allentown	16 0	*21 0	...	14 0
Altoona	16.0	*21.0	...	14.0
Erie	14 0	19 0	...	14 0
Dover, Del. ..	19.0	22 0	2 0	14 0
Wilmington ..	19.0	22 0	3.0	14 0
Spring'd, Mas..	19 0	21 0	...	16 0
Worchester	19.0	21.0	...	16 0
Boston	19 0	21 0	...	15 0
Providence, R.I.	20 0	22 0	...	16 0
Hartford, Conn.	21 0	23 0	2 0	16.0
New Haven ...	21 0	23 0	2 0	16 0

*Includes tax of 2 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

ATLANTIC COAST DISTRICT
Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlantic City..	16 0	....	...	14 0
Newark, N. J ..	16.0	18.0	...	14 0
Annapolis, Md..	20 0	....	4 0	14 0
Baltimore	20 0	23 0	4.0	10 0
Cumberland	20 0	23 0	4.0	14 0
Washington ..	18 0	21 0	2.0	12.0
Danville, Va...	20 5	....	4 5	14 0
Norfolk	20.5	23 5	4 5	14.0
Petersburg	20 5	23 5	4 5	14 0
Roanoke	20 5	23.5	4.5	14 0
Richmond	20 5	23 5	4 5	14 0
Charleston, W. Va.	19.5	22.5	3 5	14 0
Keyser	19.5	....	3 5	14 0
Parkersburg ..	19 5	22 5	3 5	14.0
Wheeling	19 5	22 5	3 5	14 0
Charlotte, N. C.	20 0	23 0	4 0	14.0
Hickory	20.0	23 0	4 0	14.0
Mt. Airy	20.0	23 0	4 0	14 0
Salisbury	20 0	23 0	4 0	14.0
Charl'st'n, S. C.	20.0	23 0	5 0	14 0
Columbia	20 0	23 0	5.0	15 0

PACIFIC COAST DISTRICT
Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
San Francisco..	11 0	15 0	2.0	15 5
Los Angeles...	08 5	10.5	2 0	15 5
Fresno	11 0	15.0	2 0	17 5
Reno, Nev.	19 0	23 0	4 0	19 0
Portland, Ore..	14 0	18 0	3 0	16.5
Seattle, Wash..	13 0	17.0	2 0	16.5
Tacoma	13 0	17 0	2.0	16 5
Spokane	15.0	19 0	2 0	20 5
Phoenix, Ariz .	19 0	23.0	3 0	20 5

NEBRASKA
Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Omaha	16 25	19 25	2 0	18.25
McCook	19.75	21 75	3.0	14 75
Norfolk	18 0	20 0	2.0	13 75
N. Platte	19.75	21 75	3 0	14 50
Scottsbluff	19 25	21.25	3.0	14.00

NEW YORK AND PART OF NEW ENGLAND DISTRICT
Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Albany, N. Y..	19 0	21 0	...	15 0
*New York ...	19 0	23.0	...	15.0
Buffalo	18 0	21 0	...	14 0
Rochester	17 0	20 0	...	14 0
Syracuse	19 0	21 0	...	15 0
Boston, Mass.,.	19 0	21 0	...	15 0
Augusta, Me...	22 0	26.0	3 0	15 0
Manchester, N. H.	21 0	23 0	2.0	15 0
Burlington, Vt.	21 0	23 0	2.0	15.0

*Price in steel barrels.

ROCKY MOUNTAIN DISTRICT
Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Denver, Colo...	17 0	17.0	2.0	15 5
Pueblo	17 0	18.0	2 0	15 5
Grand Junction	20 5	22 5	2 0	19 0
Casper, Wyo...	18.0	20 0	3.0	14 0
Cheyenne	18 0	20 0	3.0	15 5
Butte, Mont...	22 0	22 0	3 0	19 0
Helena	22 5	24 5	3 0	19.0
Salt Lake, Utah	21 0	23 0	3 5	17 0
Boise, Idaho...	23 5	25.5	4 0	19 0
Twin Falls ...	23 5	25.5	4 0	19 0
Albuquerque. N. M.	21 0	24.0	5 0	18 0

TANK WAGON CHANGES

April 23—Continental Oil Co. reduced the gasoline tank wagon and station prices 1 cent at Albuquerque, N. Mex.

April 29—Magnolia Petroleum Co. reduced the kerosene tank wagon 4 cents at Dallas, Tex.

April 29—Standard Oil Co. of New York reduced the kerosene tank wagon 1 cent to 15 cents throughout their territory except where the prices were already 15 cents or lower.

May 1—The Colorado state tax on gasoline was increased from 2 cents to 3 cents per gallon and the Continental Oil Co. absorbed this increase by holding the tank wagon and station prices the same.

SHREVEPORT MARKETS HAVE UPWARD REACTION

SHREVEPORT, La., May 2.—An upward reaction in gasolines, due principally to the acute shortage of tank cars aided by a slightly improved domestic demand, was the chief development in North Louisiana-Arkansas refinery markets the past week. This was the first week in several months that gasolines have not experienced a gradual weakening.

The strengthening was indicated by the removal from the market of all 6¼-cent U. S. Motor material, which the previous week was offered freely by one large refiner, making a market Monday on which all sellers were quoting 6½ cents. Refiners reported some increased demand, despite the fact that many of the most important marketing districts are under water. Rail service east and south virtually has been suspended, and sellers are disposing of their gasoline chiefly locally. Natural gasolines, however, continued weak, but what the coming week has in store for them is extremely uncertain. The Monroe district, where the bulk of natural gasoline in this territory is manufactured, is being flooded to a serious extent, and it will be a question of a short time until it will be isolated. So far, natural gasoline plants have been unaffected by high water and are operating as usual, but a shutdown is anticipated. Shreveport refiners Monday reported being long on natural gasoline, which was available at 4¼ cents on Grade C.

Considerable interest was centered in gas oils, with a number of inquiries being received from jobbers and marketers for contracts for next season. Although gas oil at present is weak, being quoted from 2¾ to 3 cents, refiners are slow to take on any contracts until they are in a better position to determine possible trends for next winter. It is understood marketers want to buy at 4 cents for next season, but refiners last winter were able to get as high as 4¾ to 5 cents. One refiner, however, made a contract during the week for the delivery of 100 cars of gas oil, shipment to be in the near future, the material to be placed in northern storage. Fuel oils and kerosenes continued inactive on the spot market and were only steady in price. The renewal of fuel contracts by three railroads was culminated the past week, but the contracts were unchanged from those of the previous year, calling for the purchase of oil on a flat price ranging from $1.15 to $1.20. At present, these contracts are extremely favorable to refiners, as few contracts are made here based on crude.

Standard's 10-Inch Line From Smackover Shut Down by Flood

SHREVEPORT, La., May 2.—Operation of the Standard Oil Co. of Louisiana's 10-inch pipe line from the Smackover Field of Arkansas to the Grand Lake station on the Mississippi River has been suspended entirely, it was announced by company officials in Shreveport Monday.

The line itself has not been damaged by the flood so far, but three pump stations, including the large one at Grand Lake, are under water, the latter being covered 6 feet. This line carries the bulk of the company's heavy oil from Smackover to Grand Lake, where it is loaded in tankers to be shipped by water to the company's plant at Baton Rouge.

Oil Company Boats Donated for Relief Of Flood Victims

SHREVEPORT, La., May 3.—Although tying up oil shipments to a large extent, all available boats of the Standard Oil Co. of Louisiana at Baton Rouge and New Orleans are being donated to agencies engaged in rescuing victims of the Mississippi floods and are being ordered to all points along the river where needed.

The Standard Oil Co. and other oil companies also have placed at the disposal of refugees the r stocks of tents and camp supplies.

CRUDE OIL PRICES

(Continued from Page 159)

Penna Grade Oil in Buckeye Pipe Line Lines (Ohio).....	2.60
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) March 16....	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17) ...	1.35
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.45
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) March 16.....	1.50
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	.95
Keister (Pennsylvania)	1.10

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1 77
Illinois	1.60
Indiana	1.48
Princeton	1.60
Plymouth	1 .32
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.35
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16)..	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927).....	1.50
†Clay County, Tennessee (November 18)	2.35
§Oil Springs (Canada)	2.19
§Petrolia (Canada)	2.11

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.

MEXICO
(Effective May 13)

*Tuxpam light (f.o.b. Mex. ports).....	$1.38
†Panuco heavy (f.o.b. Mex. ports).....	1.15
Tuxpam (New York)	2.16
Panuco (New York)	1.80

*Plus 32.338c tax. †17.631c tax.

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Brief Items for Plant Operators

American Refining Company to Appeal Federal Decision

WICHITA FALLS, Tex., Apr. 30.—The American Refining Co. of this city will appeal the decision of Judge Hugh M. Morris of the Federal District Court at Wilmington, Del., who held the company liable for royalty payments in connection with the operation of the Cross cracking units at its refinery here. The Federal court action follows a decision in a local state district court which also held that the company must pay royalty to the Gasoline Products Co., owners of the Cross process, in accordance with a contract entered into at the time the two cracking units were installed in 1923.

The American-Gasoline Products dispute has been in the courts since 1924. At that time the American refused to pay further royalties to the Gasoline Products Co. Its position was based on the suit which the Government had brought against several owners of cracking processes, including the Cross, in which it was alleged that a patent club had been formed in violation of the Federal antitrust law. The Gasoline Products Co. brought suit in the state court and was successful, the court holding that the pending suit of the Government did not affect the validity of the agreement between that company and the defendant.

The American Refining Co., however, continued in its refusal to pay the royalty and took its case to the Federal courts. In this later case the American company contended that the principal Cross patent (No. 1,423,500), around which the commercial cracking process was developed, was not valid, due to the fact that the process was covered by the so-called Ellis patents issued previously.

Judge Hugh M. Morris, in his decision announced last week at Wilmington, failed to sustain the American's contention. He upheld the validity of the Cross patent. The decision further complicates the legal tangles which have developed in recent years relative to the operations of cracking processes. As the case now stands, the American company is liable for all the royalty payments it has refused to pay. The decision of the American company to appeal the case means that a final decision will be further delayed.

REFINERY AT SAGINAW FOR INDIANA COMPANY

CHICAGO, Apr. 30.—Announcement was made today that the Standard Oil Co. of Indiana plans to build a refinery at Saginaw, Mich., and has contracted with the Saginaw Prospecting Co and the Fordney Oil Co. for their production in the Saginaw oil field. An appropriation of $200,000 has been made by the company for the refinery, which is planned for a crude throughput of 1.000 bbls. daily, and will be of the skimming type.

The production of the Saginaw Field is approximately 2,000 bbls. daily from 250 wells, the crude being of about 45 gravity. A test made in a local office of crude from the large well recently drilled by the Sun Oil Co. showed 47 gravity at 60 degrees. Recent wells drilled to the Saginaw sand have indicated possibilities of large production, the first wells being small pumpers.

This is the first plant to be built in the Saginaw district. The bulk of the crude in the past has been purchased by the Sun Oil Co. and the National Refining Co. which moved the crude in tank cars to their Ohio refineries.

TESTS AT EASTERN REFINERIES SHOW CONSIDERABLE VARIATION

By A. W. Scott*

Secretary and Treasurer, Empire Oil Corp.

At the beginning of the fiscal year 1926-27, the department of standards and tests of the N. P. A. mapped out a program which they believed would be of considerable help to the members of the association. At the very outset, it was recognized that there were many members who had splendid, well-equipped laboratories operated by competent chemists and producing satisfactory results. These members are to be congratulated on having laboratories which are better than the average small refinery laboratory, but this should not lessen their interest in our program. In the interest of continued accuracy in their laboratories, our plan should be profitable to them.

The average small refinery laboratory usually finds it quite difficult to produce results which will check reasonably close with other refinery laboratories and with commercial laboratories. It is with this in mind that we have laid our plans for this year's activities.

We are gradually organizing refinery groups situated geographically so that the members can attend with as little inconvenience as possible.

We plan to have each group hold not less than four meetings during the fiscal year. At two of these meetings samples of gasoline, one a straight run and one a blended product, will be given to each refinery represented, and one sent to those not represented. Complete tests are to be made and reported back to the group chairman, who, in turn, will report to the trustee-in-charge. These tests will then be bulletined by the Washington office of the association and each refinery notified which test belongs to it.

This same plan will be followed twice during the year by using a sample of Pennsylvania steam refined cylinder stock, but, in addition to furnishing each group member with a sample, one will also be sent to the United States Bureau of Standards at Washington, D. C. The results of these tests will be bulletined in the same manner as the others.

The following groups have already been organized: Oil City-Titusville, Bradford, Warren, Pittsburgh-Butler, Ohio-West Virginia and Philadelphia groups. All of these groups have held at least one group meeting of their laboratory men except the Philadelphia group, which will start functioning in the near future.

Wide Differences

Two different samples of gasoline have already been tested by the Bradford group and a still different one by the Oil City group. In the Bradford group, the gasoline tests ranged as follows:

First Sample

Initial	95° to 100°
Endpoint	436° to 447°
Recovery	95½% to 98½%

This shows a range of 5 points on initial, 11 points on endpoint and 3 points on recovery.

Second Sample

Initial	86° to 88°
Endpoint	406° to 417°
Recovery	95% to 97½%

This shows a range of 2 points on initial, 11 points on endpoint and 2½ points on recovery.

In the Oil City group the gasoline tests ranged as follows:

Initial	102° to 115°
Endpoint	418° to 430°
Recovery	96% to 98%

This shows a range of 13 points on initial, 12 points on endpoint and 2 points on recovery.

The Oil City group also tested a sample of Pennsylvania steam cylinder stock which had the following range:

Gravity	25.9 to 27
Flash	545 to 565
Fire	600 to 635
Pour	35 to 60
Viscosity	141 to 148

This shows quite a wide range on all of the tests taken on this sample of stock.

These results have all been bulletined, and you no doubt have had an opportunity to inspect them. You will note there is a considerable difference in the results obtained on the samples of gasoline and cylinder stock. These differences in results on tests are each year costing our refinery members a very large sum of money, by reason of rejected materials which are subsequently returned to the refinery for rerunning or are resold at a considerable loss. In addition to the money loss, there is the loss in friendly relations with the customer, the extent of which is impossible to figure.

We firmly believe that these facts are worthy of the careful consideration of the executives of the refinery members and should interest them, not only in having their laboratories co-operate with us in our program, but also in carefully watching the results of the check-ups which are being bulletined from time to time, and in seeing that these reports reach their laboratories promptly. These reports should be preserved so that later reports may be checked against them and the improvement, if any, noted.

*Paper presented at the semiannual meeting of the National Petroleum Association, Cambridge Springs, Pa., April 28. Mr. Scott is trustee in charge of the department of standards and tests of the association.

AMONG THE TECHNICAL MEN

Wayne P. Rice, general superintendent of the Ponca City, Okla., refinery of the Marland Refining Co., has been connected with the company's manufacturing department since 1917. During that period the refinery has expanded from a small skimming plant to a complete refinery which at the present time is one of the major plants of the entire industry.

Wayne P. Rice

Mr. Rice's first position with the Marland company was that of foreman in charge of construction. Beginning at that time the plant's operations were steadily expanded culminating in an enlargement program completed during the past year which involved an expenditure of several million dollars in new cracking equipment and other phases of plant improvement. Mr. Rice was made assistant superintendent of the refinery in 1919 and since 1921 he has held his present position as general superintendent.

Mr. Rice's first experience in refining was at the Erie, Kans., plant of the Great Western Oil & Refining Co. He started to work at this refinery in 1910 when he was 16 years old. For four years he worked in all departments including the lub plant. His next employment covered a two-year period at the Ponca City refinery of the Ponca City Refining Co., now owned by the Empire Refineries, Inc. He was employed in the construction of the lub plant at this refinery and for a time was in charge of the paraffin operations.

He was next engaged in the producing end of the oil business in the Butler County fields of Kansas. After one year he returned to refinery operations being in charge of the paraffin plant of the Independence, Kans., refinery of the Petroleum Products Co. He held this position at the time he entered the Marland organization.

REFINERY FOR LANDER

CASPER, Wyo., Apr. 30.—The Producers & Refiners Corp. and other interests around Lander are considering placing a refinery at Lander to handle the black oil produced from the Hudson and other fields. The old Wind River refinery built at Lander in 1918 has been moved away. The Riverton refinery would necessitate a 20-mile pipe line from Lander so the plan is to build a refinery near the Hudson Field, top the black oil for its gasoline and sell the fuel oil locally and the gasoline likewise. The proposed plant is to have a charging capacity of 2,500 bbls.

HUNTINGTON BEACH PLANT

LOS ANGELES, Apr. 30.—The Standard Gasoline Co., formerly the Pacific Gasoline Co., which changed its name upon its purchase by the Standard Oil Co., is constructing a new absorption plant in the Barley Patch district of the Huntington Beach Field. The project will cost about $70.000, and is being built at Twenty-third Street and Ocean Avenue.

The plant is being constructed primarily to handle wet gas from the new wells which the Standard is drilling along the ocean front, although gas from other wells also will be handled.

NEW PINE ISLAND PLANT

SHREVEPORT, La., Apr. 30.—National Gas Products Corp. of Shreveport, La., has just completed the first unit of an absorption gasoline plant in the Pine Island district of the Caddo oil field. This unit has a capacity of 3.500 gallons daily. Three additional units will be started in the near future.

(Recent Patents on Page 178)

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Type 86—An ultra-sensitive, all-metal self-enclosed vacuum regulator. Will hold positive down to ½" of mercury on inlet side. Type 88—will regulate any vacuum on inlet side. If desired can carry 3 lbs. pressure on inlet side and vacuum on outlet. Type 87—Casing head self-enclosed combination Back Pressure and Vacuum Regulator. Eliminates friction due to dirt, sand, snow or sleet.

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To the left is shown a picture of the Fisher Ultra-Sensitive Vacuum Regulator Type 86, holding vacuum of 5 inches on an oil and gas well.

THE FISHER GOVERNOR COMPANY

393 Fisher Building
MARSHALLTOWN, IOWA, U. S. A.

END OF CALIFORNIA'S GASOLINE WAR IS NEAR

LOS ANGELES, Calif., May 3.—The California Petroleum Co. today re-established prices prevailing before the gasoline price war was started, and other companies are expected to follow suit. This will make the price of gasoline 18½ cents per gallon in the Los Angeles territory and 19 cents in the San Francisco territory.

—

LOS ANGELES, Calif., Apr. 30—The past week has developed no apparent changes in the gasoline war for domestic gallonage in California, and more especially in Southern California. The Union Oil Co. of California is still maintaining its price at 14½ cents per gallon at service stations, including 2-cent state tax. The other marketing companies are retailing gasoline to the public at 12½ cents, including state tax. From all appearances, Union Oil service stations are doing very little business at a price higher than that offered by others but in spite of the loss of gallonage officials evidently feel gasoline prices will not long remain at 12½ cents and that the other companies will soon be back to the price quoted by the Union.

On Monday the small refiners got together and established a price of 7½ cents per gallon, delivered at service stations. Some had been selling 1 cent under this figure. Quite a number favored establishing a price of 8 cents rather than 7½ cents. There is no question that the small refiners are very seriously feeling the effects of the demoralized market and will not again start to lower the price on their so-called "bootleg" brands very soon.

Figures released by the Bureau of Mines show that refineries in California produced at the daily rate of 152,495 gallons of gasoline during March. This is a decrease of 9,175 gallons daily under February. In spite of the decreased production, stocks of gasoline increased during March by 496,098 bbls., the total stocks at the end of the month amounting to 13,152,640 bbls.

The natural gasoline production during March showed a daily decrease of 862 bbls. While natural gasoline showed an increase in utilization during the month of 102,390 bbls over February, the daily utilization was less than daily production by 3,484 blbs., stocks increasing 107,982 bbls. and amounting to a total of 567,677 bbls. at the end of March. This is the largest supply of natural gasoline on hand in California for a long, long time.

The statistical position of gasoline and natural gasoline illustrates that present low prices are not entirely the result of the gasoline war now being staged. California is going through a period of overproduction of both gasoline and natural gasoline and this was one of the main factors for the recent reduction. At present no relief from the situation is in sight, even considering the added demand during the summer.

TEXAS PANHANDLE

(Continued from Page 40)

pleted flowing and swabbing 200 bbls. daily. Phillips Petroleum Co.'s No. 14 J. J. Perkins (Martin), Section 1, Block X02, topped the pay in lime at 2,910 feet and drilled to 2,979 feet. The well was completed flowing and swabbing 300 bbls. daily after a 80-quart shot at 2,945-77 feet.

South of the river, White Eagle Oil & Refining Co.'s No. 3 Johnson Brothers (Montgomery), Tract 2, M. Whitley Survey, was shot with 100 quarts at 2,906-30 feet in lime and is flowing and swabbing 650 bbls. daily; total depth 2,936 feet. Dixon Creek Oil Co.'s No. 1 E. Cockrell, Section 2, Block B-3, D. S. & E. Survey, was shot with 380 quarts in lime at 2,930-3,012 feet and was completed 15 bbls. per hour. The well is in the recently opened McIlroy territory. Kistler Oil Co.'s No. 4 Johnson Brothers, Section 21, Block Y. topped the pay lime at 2,875 feet and penetrated it to 2,918 feet. The well is making 250 bbls. daily and cutting 5 per cent water.

Probably the best completion of the week in Hutchinson County was Dan A. Japhet's No. 7 H. E. Smith and others, Section 11, Block Y, M. & C. Survey, which topped pay in lime at 2,774 feet and was drilled to 2,816 feet. The well was shot with 120 quarts at 2,785-2,816 feet and started off flowing 20 bbls. an hour and was completed as a 400-bbl. well. Three wells were completed on the Prairie Oil & Gas Co.'s Johnson Brothers ranch. No. 42-A, Section 21, Block Y, is making 175 bb's. daily from lime at 2,965 93 feet. No. 51-A, same section, is swabbing and flowing 226 bbls. daily from lime pay at 2,987-3,038 feet. No. 62-A, Section 22, Block Y, had the pay in lime at 2,864-2,978 feet, and is making 75 bbls. daily.

Wheeler County

Four wells were recorded in the Shamrock Pool of Wheeler County. Tidal Oil Co.'s No. 2 W. E. Bentley, Section 42, Block 24, H. & G. N. Survey, started off flowing 70 bbls. per hour from granite wash at 2,343-55 feet and averaged 970 bbls. daily for five days. The well had 3,000,000 feet of gas at 2,292 feet, which increased to 38,000,000 feet at 2,332 feet. Gibson Oil Co.'s No. 3 W. E. Bentley, Section 41, Block 24, had the pay in granite wash at 2,355 58 feet; total depth 2,370 feet. The well was started off with an initial flow of 290 bbls. the first 24 hours and averaged 236 bbls. for four days. Magnolia Petroleum Co.'s No. 1 J. A. Worley, Section 42, Block 24, is good for 40 bbls. daily from 2,295-2,325 feet, total depth 2,355 feet. The well had 4,000,000 feet of gas at 2,060-80 feet, 8,000,000 feet at 2,265 feet and 20,000,000 feet at 2,236 feet. The Texas Company's No. 2 Noah Smith, Section 40, Block 24, is a 30-bbl. well after a 140-quart shot at 2,259-84 feet. The well was plugged back from 2,412 feet.

Late Fields

(Continued from Page 39)

ing 300 bbls. an hour on Tuesday against a 76-pound back pressure. The company is erecting a gas separator on the lease. No. 2 is also making 25,000,000 feet of gas. The same company's No. 1 Cockrell, increased from 1,000 bbls. to 2,000 bbls. since No. 2 came in.

In Gray County wildcat territory and 5 miles south of the Wilcox-Pampa Pool, Riley and Heck's No. 1 Hopkins, SW cor. Section 66, Block B-2, H. & G. N. Survey, has a showing of oil in granite wash at 3,010 feet and is cleaning out for a test.

BAD PRACTICES CAUSE NUMEROUS DISPUTES

(Continued from Page 156)

color and sweet" is specified on gasoline orders, and, looking at it from a technical standpoint, we can recognize the origin but most customers take a literal meaning and it is surprising to note the controversies that arise in determining just how fragrant or sweet gasoline should be.

Trade Practices

Let us now refer to a few of the details of oil trade practices which I believe deserve some consideration.

Is it not much better to sell material f.o.b. refinery, freight allowed destination, instead of naming a delivered price? When buying or selling is it not more satisfactory to specify the gallonage rather than a certain number of tank cars?

Is it not imperative that the right of the seller be upheld by insisting that all complaints and outages of material should be adjusted before unloading?

Is it good practice to sell at a specified price with a guaranty against decline, or countenance the willful breaking of contracts?

Is it right to allow discounts to be taken 15 or 16 days after date of shipment when terms are 1 per cent 20 days or 30 days net?

Is it good policy to encourage buyers to reverse telephone calls and wire collect?

Is it not poor business to make a general practice of allowing unfilled orders to remain upon our books after expiration of date of shipment? Is it not always better to cancel at the time or make some satisfactory adjustment and extend time of delivery to another specified date?

Briefly, my personal conception of a successful and pleasant transaction is when both buyer and seller have the proper knowledge of the material being handled, with a thorough understanding of the grade and specifications; size of car; time of deliver; destination; railroad delivery; terms, etc.—combined with an earnest effort and desire to faithfully fulfill their respective part of the agreement. A transaction of this kind causes very little trouble or expense; creates a friendly spirit between buyer and seller and usually encourages new business.

Oil trade practices or ethics should not be unlike those of any other legitimate business and we all know the only way we may expect to build up a business and hold it is by dealing fairly.

PROGRAM FOR MEETING OF NATURAL GAS MEN

(Continued from Page 34)

Address of the President: R. W. Gallagher, president, The East Ohio Gas Co., Cleveland, Ohio.
Appointment of committee on president's address, by N. C. McGowen, vice president.
Report of Memorials Committee: James H. Dye, chairman, Pure Oil Co., Charleston, W. Va.
Paper: "Education of Employes"—P. G. Vondersmith, Union Gas & Electric Co., Cincinnati, Ohio. Discussion.
Paper: "Laboratory Developments of Interest to the Natural Gas Industry"—R. M. Conner, director, Testing Laboratory of American Gas Association, Cleveland, Ohio. Discussion.
Luncheon will be served immediately after the meeting in Machinery Hall adjoining the Auditorium. Secure tickets at registration desk.
2 p. m. Report of Wrinkle Committee: W. Re. Brown, chairman, editor, "Natural Gas," Pittsburgh, Pa.
Paper: "Selling Gas and Gas Appliances for Domestic Purposes"—George E. Whitwell, Equitable Gas Co., Pittsburgh, Pa. Discussion.
Paper: "Some Aspects of Natural Gas Rates"—John E. Mullin, Esq., Kane, Pa. Discussion.
Paper: "Selling Gas for Commercial and Small Industrial Uses"—Harry O. Loebell, Surface Combustion Co., New York City. Discussion.
8 p. m. Special night meeting in Auditorium of Music Hall, President R. W. Gallagher, presiding.
Program:
Musical selection.
Address, Doctor Condon, superintendent Cincinnati public schools.
Essay by winner of the Junior Contest on the "Story of Natural Gas."
Musical selection.
Address by H. C. Blackwell, president and general manager, Union Gas & Electric Co.
Essay by winner of the Senior Contest on the "Story of Natural Gas."
Musical selection.
Address by Phillip G. Gossler, president, Columbia Gas & Electric Corp.
Moving pictures, "The Story of Natural Gas."

WEDNESDAY, MAY 11

9:30 a. m. Report of Publicity Committee: H. J. Hoover, chairman, Cincinnati, Ohio.
Paper: "Meeting the Natural Gas Problems of the Southwest"—N. C. McGowen, Louisiana Gas Co., Shreveport, La. Discussion.
Question discussion—
The remainder of the day will be devoted to discussion of the following questions, with J. D. Creveling, of Henry L. Doherty & Co., New York, acting as chairman:

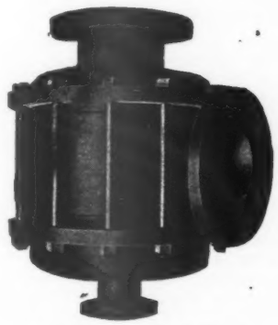
1. What effective methods do you recommend for reducing distribution system leakage?
2. What practical methods would you use for determining transmission system leakage?
3. What is the practical range for intermediate and low pressure regulators?
4. What practical methods are being used for controlling deliveries from high-pressure wells?
5. What method do you regard as most effective in gaining the good will of the consumer?
6. What new methods have been developed for removing fluids from gas pipe lines?
7. What is the value to gas companies of Home Service Departments?
8. How should gas companies promote safety among their employes?
9. What are the new developments in gas meters?
10. What are the practical applications on welding of natural gas lines—field, transmission and distribution?

The annual picture of the convention will be taken immediately after the adjournment of the morning session, followed by the usual luncheon.
2 p. m. Resumption of the Question Discussion.
6:30 p. m. Twenty-second annual banquet. Roof Garden of Hotel Gibson. Toastmaster, W. W. Freeman, vice president, Columbia Gas & Electric Corp., New York.
Speakers—
C. J. Hicks, New York City, on "Industrial Relations."
Dr. John L. Davis, New York City, humorist.
Senator Simeon D. Fess of Ohio on "The Present Business Outlook."

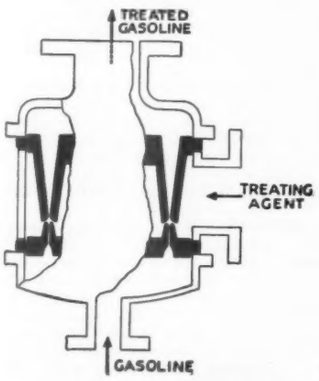
THURSDAY, MAY 12

9:30 a. m. Report of treasurer.
Paper: "The Use of Gas and Air in Oil Recovery"—Frank M. Brewster, Petroleum Reclamation Co., Bradford, Pa. Discussion.
Reports—
Technical and Research Committee, H. C. Cooper, chairman, Pittsburgh, Pa.
Committee on Gas Distribution, J. H. Maxon, chairman, Muncie, Ind.
Committee on Gas Measurements, F. M. Towl, chairman, New York City.
Committee on Gas Utilization, E. D. Leland, chairman, Pittsburgh, Pa.
Committee on Gas Transportation, H. D. Hancock, chairman, Kansas City, Mo.
Committee on President's Address.
Committee on place of meeting.
Committee on nominations.
Election of officers and directors.
Report of Committee on Final Resolutions.
Adjournment.
2 p. m. An inspection tour of the electric generating plant of the Columbia Power Co., at Columbia Park, one hour's ride from Cincinnati, will gladly be arranged if sufficient interest is manifested. Members will please express their wishes, when registering, on cards provided for the purpose.

SAVES MONEY
and Gives BETTER RESULTS in
TREATING GASOLINE



The Master Mixer Head —Patented



Indicating Action in Treating Gasoline

The MASTER MIXER HEAD method for treating gasoline—used by many prominent refineries in California and the Mid-Continent Field—effects very decided savings in installation and operating costs, as well as giving a more intimate and uniform mixture of oil and treating agent.

Installation costs are exceedingly low because the simple MASTER MIXER HEAD replaces the expensive agitators, foundations, large steam and compressor plants, buildings, circulation pumps and extra pumps required by old methods.

Operating costs are sharply reduced by the MASTER MIXER HEAD because it gives rapid, continuous operation, eliminates evaporation, uses less treating agent, saves space and labor, and requires less time to handle a given volume.

Better results are obtained with the MASTER MIXER HEAD because it gives an exceedingly intimate mixture—practically a temporary atomic union between oil and treating agent. It places operator in full control of processes, and handles any liquid form of treating agent.

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OPERATION of the MASTER MIXER HEAD

Gasoline is pumped into receiving chamber of Head, whence it passes through especially designed jets at a high velocity, into a zone containing the treating agent. By siphonic effect, the treating agent is drawn with the gasoline, through constricted openings above each jet, into the turbulence chamber. This process causes a most intimate contact—practically a temporary atomic union—between the gasoline and the treating agent.

Other Uses—

The MASTER MIXER HEAD is remarkably efficient in *blending gasolines*—giving a uniform blend under precise control, and greatly reducing installation and operating costs.

In *compounding lubricating oils* the MASTER MIXER HEAD also gives a uniform and intimate mixture at much lower cost for installation and operation.

Since the MASTER MIXER HEAD gives *intimate contact between any liquids* it is also used for dephlegmators and evaporating towers, pipe stills, steam stills, for air-blowing oils, mixing Foamite, dehydration of emulsions, etc.

Our engineering department is at your service. *Write us fully.*

PETROLEUM APPLIANCE COMPANY

Indiana Standard Files New Brief in Patent Club Case

INDIANAPOLIS, Ind., May 4.—The Standard Oil Co. of Indiana here, today, filed with Charles Martindale, master in chancery, its brief in the equity case brought by the United States Government against it and 51 other oil companies to enjoin them from carrying out certain contracts relating to the use of patented processes for "cracking," a phase of refinery processing.

The original suit was filed by the Department of Justice for the Northern District of Illinois on June 25, 1924. The case will be argued before the master in chancery in Indianapolis on May 16.

In its brief the Standard Oil Co. of Indiana alleges that the suit is founded on an entire misunderstanding, by the Government, of the purpose and effects of these contracts and their result. It points out the errors into which the company alleges the Government has fallen in its construction of these contracts and declares that from 1913 to 1921 the Standard Oil Co. of Indiana was the only company that had succeeded in developing a process by which the quantity of gasoline obtainable from a given quantity of crude oil could be practically doubled.

That it had received patents from the United States upon this process and was legally entitled to refuse to license any other company or individual to use it That had it so refused there would have been a vast shortage of available gasoline during that period. That in order to avert such a shortage it licensed every refiner who desired to use the process, charging therefor only 25 cents out of each dollar net profit which the licensed refiner made by the use of the process and imposing no conditions that were not reasonably necessary for the protection of its own business.

Avert Gasoline Shortage

That these contracts which are complained of by the Government were the sole and only means by which the impending shortage of supply of gasoline was averted. That none of the companies licensed to use the process was given any advantage or benefit except the ability to produce more gasoline at a lower cost. That every licensee that installed the process immediately became able to produce twice as much gasoline as he could formerly produce and was in no manner restricted as to the territory in which he might market every gallon of gasoline he could have produced before accepting the license. That every contract complained of, in place of restraining trade, gave the parties thereto greater freedom in the making and sale of gasoline.

Explain Agreement

The company asserts that in 1921, three other companies had succeeded in developing and patenting three different processes by which the same result might be accomplished and there arose a controversy between the Standard Oil Co. of Indiana and each of these three companies against each other as to their patent rights and questions of infringement between them. That several suits were pending in the courts, numerous interferences were pending in the patent office, other suits and interferences were threatened and each of these companies was deterred from extending its operations through fear of the result of the suits and interferences. That the demand for gasoline had increased more than 1,000 per cent while the supply of crude oil had increased only 200 per cent and that unless some settlement could be made by which all the owners of the patented processes could use them freely and license others to use them, a shortage of supply of gasoline would immediately result.

Statistics of the Bureau of Mines are set forth showing that if cracking processes had not been used freely, the entire world supply of crude oil would have failed to produce sufficient gasoline for the use of the United States in 1925, and that it would have required 287,000,000 bbls. more of crude oil than was available in the United States in that year to produce a sufficient supply of gas oline. Also, that they and the other three owners of the patented processes solved this problem by agreeing not to sue each other and to permit each one to use and license others to use his process without fear of litigation for the sole purpose of averting a shortage of gasoline.

INCREASE IN CRUDE AND GASOLINE STOCKS 7,600,000 BBLS. IN MARCH

WASHINGTON, D. C., May 2.—Petroleum statistics announced today by G. R. Hopkins of the United States Bureau of Mines show that the production of crude petroleum in the United States in March as compiled from pipe line runs reached new high levels and amounted to 75,304,000 bbls. for the month, a daily average of 2,429,000 bbls. This represents an increase in daily average production of 5,000 bbls., over the previous month and of 472,000 bbls., or 24 per cent over March, 1926. Seminole was again the chief cause of the gain in national output. The daily average production in that field during March was about 300,000 bbls., a gain over the previous month of about 25.000 bbls. Seminole was little affected by the price declines which occurred in March and the activity in this field more than compensated for decreases in the old fields where the price fell below the cost of production.

Practically all the March production at Seminole was shipped as produced and little crude considering the size of the field was stored.

Pipe line and tank farm stocks east of California increased nearly 5,000,000 bbls. Very little change was recorded in refinery stocks or for light and heavy crude stocks in California.

Daily imports and shipments from California through the Panama Canal fell off as the result of surplus production of light oil in the Mid-Continent district.

Refined Products

Runs to stills of crude petroleum in March amounted to 69,082,000 bbls. of which 3,787,000 bbls. was foreign crude petroleum. The total reperesents a daily average of 2,228.000 bbls per day, a small decrease from the previous month.

Gasoline production for the month amounted to 27,886,000 bbls., a daily average of 900,000 bbls. This represents a slight increase over the previous month and is very close to the record figures of January.

The indicated domestic demand increased 11 per cent over March, 1926 to a daily average of 725,000 bbls. wihch was not sufficient to prevent a further material increase in stocks.

Stocks of gasoline on March 31 were 52,410,000 bbls as compared with 49,714,000 bbls on hand February 28 and 46,121,000 bbls. March 31, 1926. The March 1927, stocks represent 63 days supply as compared with 64 days supply on hand the previous month.

Kerosene, lubricants, and wax showed material increases in domestic demand during March. Stocks of wax passed the 200,000,000 pound mark for the first time since December, 1922, there having been a gradual increase since the low point of 89,006,000 pounds, in January, 1925.

GREATER BUYING IN OKLAHOMA MARKET

(Continued from Page 28)

complete collapse in the fuel market is prevented.

The important factor in this situation is the bituminous coal strike which started in the union mines April 1. If the strike continues the manufacturers of fuel oil will no doubt profit materially.

The coal market, however, to date has failed to reflect any price improvement. This is explained by students of the coal market as due to the fact that all the large consumers had been buying heavily for several weeks before the strike and are not in need of additional supplies at this time. The Coal Age average weighted prices on bituminous coal show the following quotations: For the week ending April 25, $2.11; April 18, $2.11; April 11, $2.15; April 28, $2.09.

Since the strike occurred, the production of bituminous coal has fallen off about 30 per cent. The production for the week ending April 16 totaled 8,017,000 tons, according to the Bureau of Mines report. This compares with a production of 11,054,000 tons for the last week of March.

In connection with prices, it is interesting to note that, although they have not yet been affected by the strike, present bituminous prices are higher than in 1926 or 1925 at this time. The average weighted price for the corresponding week of last year was $1.93. With coal prices at that low level, 24-26 fuel oil in Oklahoma was selling on the spot market at $1.40, with an average price of $1.35 for May of last year. This indicates that with present coal prices substantially higher, fuel oil under $1 should be especially attractive to fuel consumers.

Gasolines and Naphthas

There is practically no trading on future deliveries for gasoline. Crude continues to be a factor in the future gasoline market. Those expecting a further drop point to the increasing production in the Seminole Field and the newly proven acreage in other fields as certain indications of lower prices. With gasoline at 6¼ to 6½ cents, it is not likely that gasoline prices will be affected by more than one-fourth cent should a crude reduction come, and the stability given the market by removing that uncertainty should result in more buying. The lower endpoint gasolines continued to be offered at relatively low prices, and 60-62 400 endpoint gasoline was traded freely at 6⅝ cents. There were no large export orders reported up to noon Tuesday on the 64-66 375 endpoint grade to strengthen it, and domestic movement was slow at 7 cents. Naphtha prices are unchanged.

Kerosenes and Distillate

A better demand for kerosene occasioned the one-eighth cent price advance. Tank wagon prices have been reduced generally and have tended to increase the consumption, thus strengthening the refinery price at the expense of the marketer.

The distillate market might be considered closed until the late summer so far as spot movement is concerned. Only a few cars moved at 3¼ cents during the past week.

Fuel Oil and Gas Oil

A continued softening of the lower gravity fuel oils is shown as the prices decreased from 2½ to 5 cents a barrel for the heaviest grade. North Texas fuel was being quoted as low as 80 cents, and this weakness was used to force down the prices on Group 3 fuel. Some strength was shown in gas oil and the quotations ranged from one-eighth to one-fourth cent higher. This was due partially to the inability of the Arkansas and North Louisiana refiners to freely move their production through the flood areas.

Natural Gasolines

Purchases of 500 cars of natural gasoline over the past two weeks for delivery over May on export or coastwise orders have removed the distress stocks and a little more optimistic tone is given the market for that reason. There was but little trading done for delivery over the next fifteen days outside of these export orders, but manufacturers are quoting prices one-fourth cent higher than the present market.

Lubs and Waxes

No change is shown in the lub prices and the market is readily absorbing the production. The cylinder stock market continued strong and some refiners are turning their attentions to locating satisfactory crude with which to manufacture stock.

There is practically no wax market and the only requests received by the few refiners in Oklahoma making it have been at such low prices that the refiners have been moving their production on old contracts and will depend on improving conditions while storing their excess. There was no trading at 2¾ cents. Buyers were offering as low as 2½ cents.

Important Shut-In Wells in Texas Are Opened for a Test

FORT WORTH, Tex., May 3.—Yates Pool producers in Pecos County were opened briefly yesterday. The Mid-Kansas and Continental's first test flowed 130 bbls. hourly and No. 2 flowed 256 bbls. hourly in three-hour test. No. 3-A made 90 bbls. in a half hour test. No. 1-B flowed 1,837 bbls. in 24 hours while still drilling at 1,248 feet. No. 4 Yates, a south offset to No. 1-B, has 450 feet of oil in the hole at 1,135-80 feet.

George Henshaw's No. 1 Yates, between Yates Pool and Texon well in Pecos County, had show of gas at 1,400 feet, rainbow of oil at 1,185 feet, now drilling at 1,400 feet with sulphur water in the hole. Texon Oil & Land Co.'s No. 2 Yates, 660 feet south and west of No. 1 in Section 55, had rainbow show at 1,075 feet but is shut down at 1,225 feet.

Five miles south of the Yates Pool the Arkansas Fuel Oil Co's No. 1 Holmes, Section 16, Block 178, has 100 feet of sulphur water in the hole at 2,380-85 feet.

In Cooke County the Kewanee Oil & Gas Co.'s east offsets to The Texas Company's No. 1 Dennis, south of the Hooser Pool, was dry in the same sand but found 2,000,000 of gas at 1,380 feet.

In Cherokee County, East Texas, the Humble Oil & Refining Co.'s discovery well was opened yesterday flowing 1,031 bbls of fluid in a 22-hour test through a three-eights-inch choke. The fluid contained 55 per cent B. S. and 5 per cent water. It is now pinched down to three-sixteenths-inch choke and is flowing 6 bbls. hourly, one-half of one per cent water. This makes it look like an edge well. The Humble has shut down No. 2 which was drilling below 1,400 feet.

The M. T. C. Oil Co.'s No. 1 McAllester in Eastland County flowed 293 bbls. the first 12 hours Sunday and 401 bbls. Monday at 3,006-35 feet. Cranfill & Reynolds' well is still flowing 439 bbls.

MAY BUILD AMARILLO REFINERY

AMARILLO, Tex., Apr. 30.—Several local business men have become interested in building a refinery to be located in this city. Conferences have been held at which the proposition to build a 5,000-bbl. refinery were discussed. One of the men interested is Dorset Carter, owner of a pipe line connecting the Hutchinson and Carson County pools to this city. The only plant now operating here is that of the Amarillo Refining Co.

PRAIRIE SHIPMENTS IN APRIL

Prairie Pipe Line shipments of crude for the month of April were 5,484,826.16 bbls., a daily average of 182,827 bbls. This does not include what was shipped south by the Pure Oil Pipe Line controlled by the Prairie interests. April's business represents the largest shipments the Prairie Pipe Line Co. has enjoyed in years. The March business totaled 5,449,688.23 bbls., a daily average of 175,796 bbls., while in February the shipments amounted to 4,736,228 bbls., or an average of 169,151 bbls.

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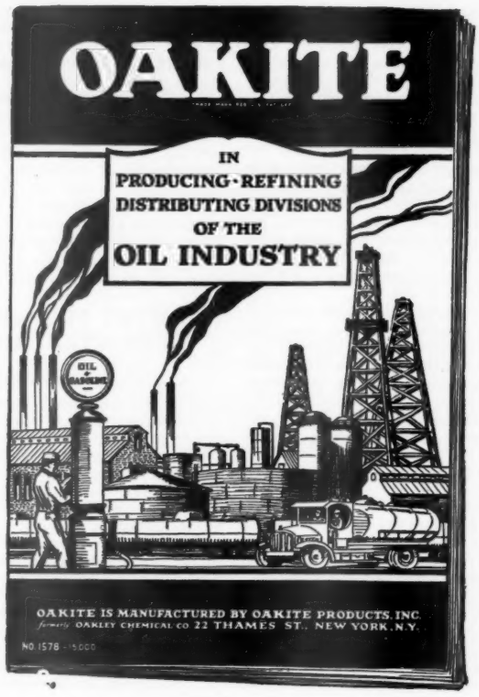

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Industrial Cleaning Materials and Methods

PROGRESS OF FIRE PREVENTION IN THE PETROLEUM INDUSTRY

By H. E. Newell*
Engineer National Board of Fire Underwriters

The relation of fire prevention to production has been recognized by practically all the great industries. In the case of the oil industry, such recognition was not early accorded, due perhaps, to the industry's rapid growth and the great production demands brought about by the rapid development of the internal combustion engine. There was an increase in average daily crude production in the United States from 1910 to 1924 of about 400 per cent. While figures are not available as to the daily average refining capacity in 1910, it has been roughly estimated that there has been an increase of somewhat more than 400 per cent.

Fire Record at Glance

Based upon statistics of the United States Bureau of Mines, the total loss of noteworthy oil and well gas fires for the period 1908 to 1917, inclusive, was $25,254,200. According to the statistics of the Actuarial Bureau of the National Board of Fire Underwriters, the yearly losses for the period 1916 to 1925, inclusive, but omitting those of 1919, which were not available at the time this paper was prepared, were as follows:

Year	Amount
1916	$ 5,070,100
1917	5,920,412
1918	6,471,119
1920	9,710,536
1921	9,420,343
1922	10,232,800
1923	11,183,421
1924	11,819,306
1925	12,721,548

By averaging the last seven yearly losses given by the National Board to obtain some idea of the probable loss for 1919, it is possible to establish conservatively the total loss for the 18-year period. Omitting the National Board figures for 1916 and 1917, and taking those of the Bureau of Mines for the period 1908 to 1917, inclusive, and those of the National Board for the balance of the period ending with 1925, we have a total of approximately $106,807,000. Of course, this figure does not include losses incurred by companies carrying their own insurance and therefore not reporting to the National Board Actuarial Bureau. At first glance it would appear that the losses, too, had kept pace with the growth of the industry. But is this the case? Let us compare them with the total value of the industry for a series of years. Let us take the period 1916 to 1925, inclusive, but omitting 1919, the loss figures of which are not available. This comparison is shown by the following table:

COMPARISON OF LOSSES

Year—	Annual Fire Loss	Total value oil industry (hundreds of million dollars)	Annual crude Production barrels	Fire loss per million dollars of value
1916	$ 5,070,100	3,500	300,767,000	$1.448
1917	5,920,412	4,125	335,316,000	1.435
1918	6,471,119	4,750	365,928,000	1.364
1920	9,710,536	6,000	442,929,000	1.618
1921	9,420,343	6,625	472,183,000	1.422
1922	10,232,800	7,312	557,531,000	1.400
1923	11,183,421	8,000	732,407,000	1.398
1924	11,619,306	8,666	713,940,000	1.340
1925	12,721,548	9,350	763,743,000	1.360

The table shows that the value of the industry has increased from $3,500,000,000 in 1916 to approximately $9,333,000,000 in 1925. It also shows that except for 1920, the fire loss per $1,000,000 of value has remained almost uniform, although with the exception noted, the figures actually indicate a very slight decline during this period. While this is encouraging, indicating as it does, that the fire loss of the industry has not actually increased, no material reduction in the fire loss has been attained. The claim might be made that these figures reflect the influence of fire prevention but it seems more reasonable to attribute them to the increasing use of all-steel tanks, and the industry's effort to reduce evaporation losses.

Progress in Prevention

The active co-operation of the oil industry in fire prevention matters dates back to about 1920, or about the time of the organization of the American Petroleum Institute. During this period some of the large companies have seriously studied many of their fire prevention and protection problems The limitations of steam as an extinguishing agent have been determined; the ability of dikes to arrest boilovers has been investigated and designs to improve their efficiency in this respect worked out; and improved methods of foam application established. Considerable progress has been made in the design of vents, but so far the industry has taken no steps to determine necessary vent area requirements for tanks of varying capacity. In the industry as a whole, fire prevention has simply gained a foothold. To date, fire hazard study has largely been devoted to storage. While individual companies may have studied the hazards of refining processes, cracking and casinghead compression plants, to my knowledge the results have not been given out for the benefit of the industry as a whole.

With reference to storage, the greatest need is a more widespread knowledge of the lightning hazard and better means for its control. Of the 503 fires recorded by the United States Bureau of Mines for the period 1908 to 1917, inclusive, 310 or 62 per cent were caused by lightning. Along the Pacific Coast the frequency of lightning storms has been so slight as to create a sense of security on the part of the oil companies in that section of the country, but this has been rudely shaken by the large fires which occurred there due to lightning early in 1926.

Chief Remedy

The chief remedy is the all-steel, reasonably vapor-tight and well-vented tank. It is well established that tanks so constructed and maintained are as safe from the lightning hazard as anything can well be. These are practically the words of the eminent British scientist, Sir Oliver Lodge, in an opinion rendered the British Government following an exhaustive investigation and series of experiments. This opinion has also the backing of authorities in this country. For more convincing evidence, one has simply to study the actual record in service of all-steel tanks. In my opinion, the wooden-roof tank, no matter how well protected by elaborate extinguishing systems and means of protection against lightning, cannot be placed in the same category as the well-maintained, all-steel tank. The prompt and reliable functioning of these systems are dependent upon too many details which in turn may readily be rendered useless by neglect or inadequate maintenance.

Nevertheless the energetic efforts of the Pacific Coast companies to devise more reliable means to combat the lightning hazard cannot be too highly recommended. Apparently the conclusion has been reached that the "Cage System of Lightning Prevention" offers the best solution. To quote Col. E. H Wilcox of the Pan American Petroleum Corp., all other systems of lightning protection operate on the theory of offering a path, such as a tower or lightning rod for the discharge of the cloud to earth, on the theory that such a tower will attract to itself the direct stroke of lightning and pass it harmlessly to ground through proper conductors, and in so doing will protect an area in the immediate vicinity of the tower from receiving this hit direct.

The Cage system of lightning prevention differs from all others in its basic theory. It proposes, not to catch and direct the stroke when it occurs, but actually to prevent the occurrence of the stroke by gathering up the induced charges on the ground and on reservoirs and tanks as rapidly as they are imposed thereon, whether by the influence of the charged cloud, or brought down in the charged raindrops, and to release this charge by ionization over a time and space interval, returning this charge direct to the cloud and so reducing its potential, and hence its ability to discharge, by breaking down the air dielectric intervening between cloud and earth. In brief, the Cage system aims at the reduction of the charge in the cloud and on the earth so that no discharge takes place.

In the field of compressed gases and the pyroxylin plastic and allied industries, the probable hazards are anticipated through experiments and research, so that when manufacture in production quantities is started, the hazards of the processes are mainly established and safeguards provided.

Another means of obtaining valuable information is through a study of the fire record. This procedure is followed by technical committees of the National Fire Protection Association. The American Petroleum Institute has endeavored to maintain complete fire records. Already this record has aided materially in the solution of the knotty problem incident to the spacing of above-ground storage tanks.

As an illustration the records of the past 10 years indicate that unprotected structural steel supports for tanks has been one of the chief contributing fire causes at marketing stations. They also indicate tank truck loading operations as probably the principal fire cause, and demonstrate the need of noncombustible construction of station warehouses and other buildings. These records furnish sufficient data for the drawing of suitable fire prevention requirements for marketing stations. This might well be the work of a special industry committee.

In the oil industry the field for research along fire prevention lines is a fertile one. At present, whenever an oil fire occurs, it seems to be the practice, in the absence of definite knowledge, to narrow the field of investigation to a few possible causes and then choose the one that appears most plausible. As a rule, this means that static electricity, or the ignition of a favorable mixture by a spark from a locomotive, or a lantern in the hands of some employe is decided upon as the probable cause, when the fire was actually caused by some other means. A study of some fires has indicated that possibly the presence of hydrogen sulphide on the underside of tank roofs may be the explanation of many mysterious fires. Recently the catalytic action of certain metals in contact with hydrocarbon vapors has been indicated as a possible cause.

The oil industry can engage in no effort at this time that will prove more profitable than fire prevention, meaning increased production, economic storage and reduction of evaporoation losses, and more money in the pockets of the oil companies. Fire prevention, too, spells conservation of our national resources.

*Before National Petroleum Association at Cambridge Springs, Pa.

ACUTE SELLING OF OIL SECURITIES HALTS

(Continued from Page 157)

(par $25) earned on the combined 1,153,656 shares of Class A and Class B stocks. This compares with $1,364,858 or $1.18 a share on 1,148,536 combined shares of stock outstanding in the first quarter of 1926.

Louisiana Oil Refining

The consolidated statement of the Louisiana Oil Refining Corp. and subsidiaries, for the quarter ended March 31, 1927, shows net profit of $294,896, including $249,989 profit from the sale of securities, but after interest, depreciation, depletion, amortization and Federal taxes, equivalent after allowing for 6½ per cent preferred dividend requirements, to 20 cents a share earned on 1,140,063 shares of no par common stock. This compares with profit of $262,484, including $209,399 realized appreciation, but before Federal taxes, in the first quarter of 1926.

New York Oil

The New York Oil Co. reports for the year ended December 31, 1926, net profit of $116,528 after depreciation, depletion, interest, etc., equivalent to 32 cents a share on the outstanding 358,787 shares of $25 par value stock, compared with $167,171, or 48 cents a share, on 347,688 shares in the previous year.

Shaffer Oil & Refining

The Shaffer Oil & Refining Co and subsidiaries for the year ended December 31, 1926, shows profit after taxes and interest of $4,952,691 available for depreciation, depletion, dividends, etc., comparing with $2,815,305 in 1925. The outstanding stock consists of $14,000,000 7 per cent participating preferred, 40,000 shares of common (par $1) and 128,464 shares of no par value common stock.

INDUSTRY PREPARING TO CURB OVERPRODUCTION

(Continued from Page 30)

industry determining in advance whether it requires further specific remedies. There is a considerable difference of opinion in the industry as to whether relief can be obtained through governmental sources, other than that of removing the doubt as regards co-operative agreements in producing operations.

On the other hand, a complete picture of the present situation presented to the Federal Oil Conservation Board, with representatives of the Department of Justice and the Federal Trade Commission in attendance, might be productive of a clarification of that point in time for it to have a decidedly important part in remedying the operproduction conditions.

Mr. Donovan Renews Assurance of Hearing Oil Industry's Plan

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., May 2.—Regarding contemplated efforts by the oil industry to solve its over-production problem by conference and agreement, W. J. Donovan, assistant attorney general in the Department of Justice, in charge of antitrust proceedings, reiterated his statement published in The Oil and Gas Journal of February 3, last. He wishes it to be very carefully understood that the Department of Justice cannot make any suggestion for action but is willing to confer with representatives of the oil producers, hear what they have to say in respect to their plans, and advise them if anything in those plans would be regarded by the department as illegal.

From my own contacts here I have received a very positive impression that the thing to do is for the oil producers to appoint a committee to consider a plan for controlling over-production, come to Washington and talk it over with Mr. Donovan and after they know what they cannot do without danger of violating the antitrust law, in the view of the department, go ahead and put into effect a workable plan in whole or in part.

SHALE OIL TESTS IN CHILE

A discovery of valuable petroliferous shale in the Lonquimay Valley, near the head waters of the Rio Bio-Bio, is reported from Santiago, Chile, and a concession to work the shale has been granted by the government to an American syndicate. It is said that process tests of the shale have yielded approximately 50 gallons of light grade oil per ton.

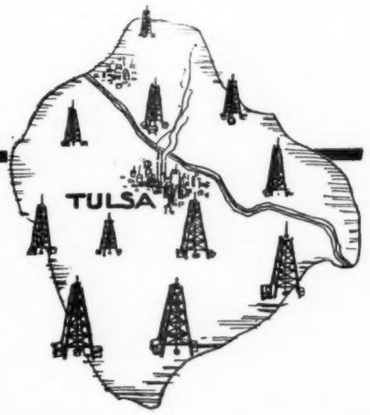
Background

IN buying, it is well to know something of the seller. In buying paint, it is not enough to know that the seller is a large company, or that the paints sold are high priced. The important thing is whether or not the seller knows the particular purpose for which you require paint.

The du Pont Company has made a long, intensive study of the petroleum field and its particular paint-protection problems. A great deal of time and money has been devoted to analyzing these highly specialized requirements. Analyses were made in the laboratory, from a chemical standpoint and, in the field, from the practical.

The result is that the du Pont Company has perfected a line of paints, varnishes and enamels, which are expressly intended for the petroleum field. And, should any new problem present itself, the du Pont chemists and paint engineers will co-operate with you to the fullest extent for the best solution of that problem.

To this end, the du Pont Company offers to executives in the petroleum industry the services of the Petroleum Finishing Service, backed by the chemical research facilities of the du Pont Company. These services are, of course, free. Inquiries are invited. E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Parlin, N. J., Tulsa, Okla., or Chicago, Ill.



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A du Pont finish for every surface

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BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

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Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

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Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

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The common process, especially when wax is to be made, involves cooling the stock to a temperature at which the crystals of wax will form, then filtering the mixture of oil and wax crystals through cloth in a special press. The temperature to which the oil is heated, and the conditions in the still have much to do with the proper structure of the wax and the quality of the lubricating oil.

Another method is known as cold settling. Here the process is to reduce the density of the oil by the addition of a lighter oil, such as naphtha, then to chill the solution and let it stand while the low temperature is maintained. Under these conditions the amorphous wax will separate and settle so the oil may be drawn off.

An improvement on the cold settling process is found in the centrifugal process, in which the diluted oil is chilled and passed through centrifugal machines. The oil made by this process contains less wax than that made by cold settling and, of course, is finished in less time.

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PETROLEUM FOR TIMBER PRESERVATION

To what extent is petroleum used for the preservation of timber? What are the substances used for treating timber against decay? Are there many plants doing this work.—A. J.

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Experiments have proven that with processes of preservative treatment, the life of timber can be extended almost indefinitely against decay. Preservative treatment also reduces losses from mechanical wear and breakage by eliminating the weakening action of decay. As sound timber offers greater resistance to destruction by fire than decayed or partially decayed timber, preservative treatment reduces fire hazards. While untreated timber lasts from two to three years, treated timber will last from 6 to 20 years. The simplest treatment prolongs the life of timber to such an extent as to more than warrant the expense.

Timber preservation treatment is practiced by various mining companies, including the Philadelphia and Reading Coal & Iron Co. which has two treating plants in Pennsylvania for the treatment of timber going into its 14 collieries, using Virginia and North Carolina pine. While untreated timber lasts three years, timber which has been treated by this company has endured for 10 years and longer. The H. C. Frick Coke Co. is going to build a plant in Fayette County, Pennsylvania, to treat 270,000 cubic feet of timber per year. The United Verde Copper Co. has a timber treating plant, while similar plants are operated by the Anaconda Copper Mining Co., Colorado Fuel & Iron Co., Miami Copper Co., Rochester and Pittsburgh Coal & Iron Co. and the Cleveland-Cliffs Iron Co. In addition there are numerous commercial plants which treat timber for mining and other companies.

OXIDATION OF LUBRICATING OILS

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It is believed that the darkening of lubricating oils is due to oxygen combining with the oil which results in changing the structure of the carbon compounds. Sometimes organic acids are formed. However, asphaltenes appear to be the principal products. This has been discussed by Dr. T. S. Sligh, Jr., of the United States Bureau of Standards, as follows:

Mineral oils combine with oxygen of the air to form undesirable oxidation products. This oxidation is accelerated at high temperatures and proceeds to some extent at ordinary temperatures. The gumming of thin films of oil when exposed to light and air is an instance of this action.

Mineral oils are a very complex mixture of compounds and it is difficult to establish the exact reactions which may take place upon combination with oxygen. However, it is known that oils heated in contact with air or oxygen do undergo certain changes which do not take place when the heating is carried on in an atmosphere of inert gas such as carbon dioxide.

As oxidation proceeds the oil develops a deep red color as viewed by transmitted light and its viscosity increases. Usually, also, organic acids are formed. The oxidation may be carried on until the oil is converted into a gummy mass which is practically all asphalt. The manufacture of petroleum asphalt is an illustration of extreme oxidation.

When an oil which has been oxidized to some appreciable extent is dissolved in light petroleum naphtha, precipitates of an asphaltic nature called asphaltenes are formed. The quantity of precipitate has been used by many experimenters as a measure of the extent of the oxidation of the oil.

Asphaltenes are responsible for the deepening of color, the increase in viscosity and, finally, the gumming of lubricating oils.

In circulating lubricating systems, however, trouble usually arises long before the gumming stage is reached. The asphaltenes are precipitated from the oil and agglomerate with any finely divided matter such as dust or metal particles which may be present, to form insoluble aggregates. If water is present this is taken up by the emulsifying action of the asphaltenes and troublesome sludges and emulsions may be formed. These sludges and emulsions are potent trouble makers as small oil passages may become plugged and in turbine and transformer installations the deposit of sludge and emulsion on the cooling coils may prevent proper cooling of the oil. It is worthy of note that the solubility of asphaltenes in oil or oil naphtha solutions decrease with the temperature, so that deposits usually take place in the cooler parts of the lubricating system.

COMPOSITION OF BRASS AND REFINERY USE

What is the composition of common brass, also the special brass known as Muntz metal? Is there any difference in these metals in their withstanding corrosion as used in vapor exchangers on light products?—M. B. P.

The alloy known as common, or standard brass, contain from 66 to 70 per cent copper and 34 to 30 per cent zinc. It is very ductile, may be worked hot or cold, is readily rolled into sheets and drawn into tubes or wire. It has a high degree of resistance to the corrosive action of many waters, which explains why it is used in the condenser tubes of locomotives and steamship boilers.

Munts metal is a special brass containing 60 per cent copper and 40 per cent zinc. It can be worked and rolled only when hot. It was formerly extensively used for covering the bottoms of wooden ships. Sea water has some action on it, the result of which is the formation of zinc salts and these prevent the fouling of ship bottoms by the ship worms, barnacles, and other living organisms.

There is little if any difference between these brasses with respect to resistance against the corrosive action of petroleum vapors. There is also some evidence that there are compounds formed, both of copper and zinc, with the hydrocarbons which give rise to treating trouble and introduce color forming bodies into the finished product. It is considered better practice to use steel tubes in exchangers which are to be used in this kind of service.

CRACKING TEMPERATURE

Is cracking temperature considered to be a fixed property or does it change with the kind of oil cracked and the process?—C. S. G.

The term cracking is employed in the petroleum industry to indicate a decomposition of a comparatively heavy molecule, the result of which is the formation of at least two products. One of these is lighter and the other is heavier than the original molecule. The starting of this decomposition and rearrangement of molecular structure depends upon a definite temperature if the question is confined to a specific hydrocarbon, because decomposition temperature is a property quite as characteristic of a compound as any other property. It is therefore different for the various oils.

The several types of cracking stills operate at different temperatures, when charged with the same general kind of stock because the other conditions are usually not the same and the products not identical. When the cracking is once started the rate of decomposition increases with the addition of heat and it is the object of each inventor of a cracking process to control the temperature within the limits which he believes will best accomplish the results in agreement with his theory. The apparatus and operation for doing this may constitute a very large part of the particular scheme as illustrated in the specifications and claims of numerous patents.

SULPHURIC ACID IN MID-CONTINENT REFINERIES

What is the approximate quantity of sulphuric acid used per annum in the Mid-Continent refineries, together with grade, prevailing price, and the products which require treatment with this acid?—S. L.

The grade of sulphuric acid used at the Mid-Continent refineries is the commercial 66 degree acid, which, at the present time is being delivered at destination for approximately $20 a ton.

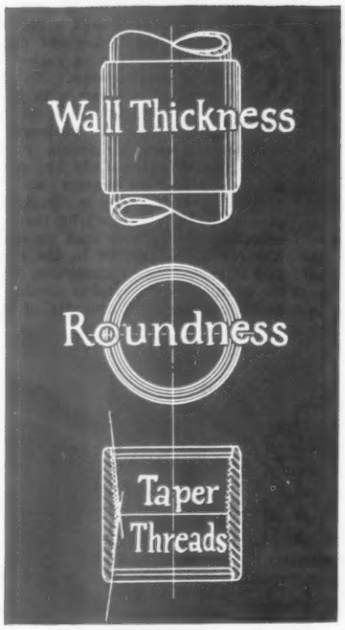
Sulphuric acid is used to purify the distillate from pressure stills, which yields the liquids commonly known as cracked products; it is also used for the treatment of kerosene, lubricating oils, and other oils derived from crude oil.

The quantity of acid used annually is approximately 40,000 tons, based on an estimate that 80 per cent is new acid and 20 per cent is old or reclaimed acid. This is believed to be a liberal estimate distributed as follows:

	Tons
Cracked products	18,000
Kerosene	21,000
Lubricating oil	9,500
Wax and miscellaneous oils	1,500
Total	50,000

Allowing 80 per cent, as suggested above, the final consumption is then 40,000 tons.

ACCURATE



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Re-threaded pipe will fit *every* Smithsteel Coupling, so long as your die points are not worn or out of adjustment.

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If you are not familiar with the use of Smithsteel Couplings, we would be glad to place the facts before you.

A. O. SMITH CORPORATION · *Milwaukee, Wisconsin*

Couplings Division

Pittsburgh—Tulsa—Los Angeles

SMITHSTEEL COUPLINGS

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When an oil which has been oxidized to some appreciable extent is dissolved in light petroleum naphtha, precipitates of an asphaltic nature called asphaltenes are formed. The quantity of precipitate has been used by many experimenters as a measure of the extent of the oxidation of the oil.

Asphaltenes are responsible for the deepening of color, the increase in viscosity and, finally, the gumming of lubricating oils.

In circulating lubricating systems, however, trouble usually arises long before the gumming stage is reached. The asphaltenes are precipitated from the oil and agglomerate with any finely divided matter such as dust or metal particles which may be present, to form insoluble aggregates. If water is present this is taken up by the emulsifying action of the asphaltenes and troublesome sludges and emulsions may be formed. These sludges and emulsions are potent trouble makers as small oil passages may become plugged and in turbine and transformer installations the deposit of sludge and emulsion on the cooling coils may prevent proper cooling of the oil. It is worthy of note that the solubility of asphaltenes in oil or oil naphtha solutions decrease with the temperature, so that deposits usually take place in the cooler parts of the lubricating system.

COMPOSITION OF BRASS AND REFINERY USE

What is the composition of common brass, also the special brass known as Muntz metal? Is there any difference in these metals in their withstanding corrosion as used in vapor exchangers on light products?—M. B. P.

The alloy known as common, or standard brass, contain from 66 to 70 per cent copper and 34 to 30 per cent zinc. It is very ductile, may be worked hot or cold, is readily rolled into sheets and drawn into tubes or wire. It has a high degree of resistance to the corrosive action of many waters, which explains why it is used in the condenser tubes of locomotives and steamship boilers.

Muntz metal is a special brass containing 60 per cent copper and 40 per cent zinc. It can be worked and rolled only when hot. It was formerly extensively used for covering the bottoms of wooden ships. Sea water has some action on it, the result of which is the formation of zinc salts and these prevent the fouling of ship bottoms by the ship worms, barnacles, and other living organisms.

There is little if any difference between these brasses with respect to resistance against the corrosive action of petroleum vapors. There is also some evidence that there are compounds formed, both of copper and zinc, with the hydrocarbons which give rise to treating trouble and introduce color forming bodies into the finished product. It is considered better practice to use steel tubes in exchangers which are to be used in this kind of service.

CRACKING TEMPERATURE

Is cracking temperature considered to be a fixed property or does it change with the kind of oil cracked and the process?—C. S. G.

The term cracking is employed in the petroleum industry to indicate a decomposition of a comparatively heavy molecule, the result of which is the formation of at least two products. One of these is lighter and the other is heavier than the original molecule. The starting of this decomposition and rearrangement of molecular structure depends upon a definite temperature if the question is confined to a specific hydrocarbon, because decomposition temperature is a property quite as characteristic of a compound as any other property. It is therefore different for the various oils.

The several types of cracking stills operate at different temperatures, when charged with the same general kind of stock because the other conditions are usually not the same and the products not identical. When the cracking is once started the rate of decomposition increases with the addition of heat and it is the object of each inventor of a cracking process to control the temperature within the limits which he believes will best accomplish the results in agreement with his theory. The apparatus and operation for doing this may constitute a very large part of the particular scheme as illustrated in the specifications and claims of numerous patents.

SULPHURIC ACID IN MID-CONTINENT REFINERIES

What is the approximate quantity of sulphuric acid used per annum in the Mid-Continent refineries, together with grade, prevailing price, and the products which require treatment with this acid?—S. L.

The grade of sulphuric acid used at the Mid-Continent refineries is the commercial 66 degree acid, which, at the present time is being delivered at destination for approximately $20 a ton.

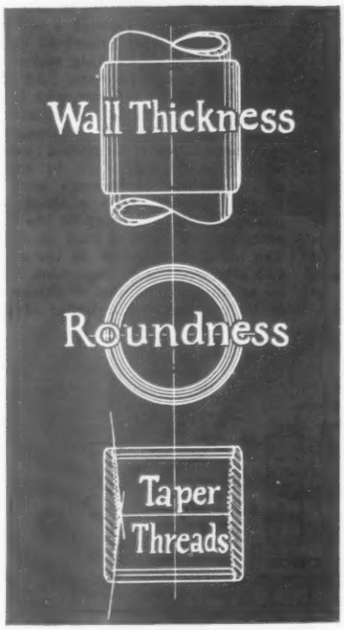
Sulphuric acid is used to purify the distillate from pressure stills, which yields the liquids commonly known as cracked products; it is also used for the treatment of kerosene, lubricating oils, and other oils derived from crude oil.

The quantity of acid used annually is approximately 40,000 tons, based on an estimate that 80 per cent is new acid and 20 per cent is old or reclaimed acid. This is believed to be a liberal estimate distributed as follows:

	Tons
Cracked products	13,000
Kerosene	21,000
Lubricating oil	9,500
Wax and miscellaneous oils	1,500
Total	50,000

Allowing 80 per cent, as suggested above, the final consumption is then 40,000 tons.

ACCURATE



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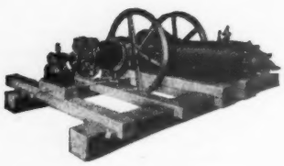
SMITHSTEEL COUPLINGS

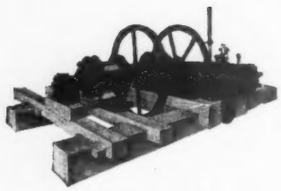
"She Sure is Cut~

D. P. Fitzsimmons, the man we quote, is standing at the left. He is District Superintendent for the Wentz Oil Corporation. R. D. Hay and E. E. Smith of the Shirk Lease are the other men.



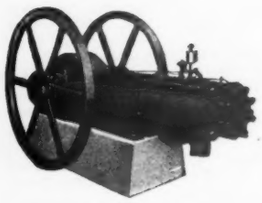
FRANKLIN OIL DRILLING ENGINE

The Franklin is a single cylinder, three port, two cycle VALVELESS engine. This is Type AO for Mid-Continent or Western Cable Tool Drilling. Price $3700.00. For Eastern Service $2600.00 and $3350.00. Prices F.O.B. Factory. Complete with self-oiling, reversible drilling clutch, circulating pump and fuel tank.



FRANKLIN GAS DRILLING ENGINE

Where gas is available this engine—just as efficient and economical—has an added advantage—*Interchangeability*. The prices for Western Service are $1725.00 and $2150.00. For Eastern Service $1450.00 and $1725.00. Prices F.O.B. Factory. These engines can show you a power, speed and flexibility almost unbelievable.



FRANKLIN GAS PUMPING ENGINE

Similar in construction design as the gas drilling engine and inter-changeable on the same block with it. You can either leave your Drilling Engine on the job for pumping or replace it with one of these lesser horse power Franklins without changing a single bolt.

Don't forget the Franklin construction keeps out all sand and grit; no valve grinding and the bath lubricating system used reduces lubrication bills 75%.

FRANKLIN VALVE